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THE AMERICAN YEAR BOOK

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EDITOR

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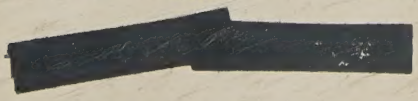


TABLE OF CONTENTS

PREFACE v

CONSTITUENT SOCIETIES AND SUPERVISORY BOARD xi

CONTRIBUTORS xv

PART ONE: HISTORICAL

DIVISION PAGE

I. AMERICAN POLITICAL HISTORY 1

The President and his Policies.—The Year in Congress.—Federal Administrative Agencies.—The Supreme Court and Constitutional Law.—Elections of 1937.—Chronology of National Affairs.

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES . . 68

The United States and Europe.—United States and Latin America.—United States Relations in the Orient and Near East.—Foreign Service of the United States.—The League of Nations and Associated Agencies.—Chronology of International Affairs.

PART TWO: AMERICAN GOVERNMENT

III. THE NATIONAL GOVERNMENT 111

Federal Administrative Organization.—Members of the Senate and House of Representatives.—Federal Judicial Organization.—Federal Prosecutions and Judicial Decisions.—Federal Civil Service.—Chronology of the National Government.

IV. STATE GOVERNMENT 155

State Administration and Legislation.—National and Interstate Relations of States,—State Constitutions, Referenda and Initiatives.—Electoral Legislation.—Law Reform.—County and Rural Government.

V. MUNICIPAL GOVERNMENT 183

New York City Affairs.—City Politics.—Functions of Municipal Government.—Types of Municipal Government.—Special Municipal Activities.

VI. TERRITORIES AND SPHERES OF AMERICAN INFLUENCE . . . 198

Alaska.—Hawaii.—Puerto Rico.—Philippine Islands.—Virgin Islands.—Guam and American Samoa.—American Equatorial Islands.—The District of Columbia.

PART THREE: GOVERNMENTAL FUNCTIONS

VII. PUBLIC FINANCE AND TAXATION 222

National Finance and the Public Debt.—State Finance.—Municipal Finance.—Income Taxes.—Land and Property Taxes.—Corporation and Bank Taxes.—Estate and Inheritance Taxes.—Automobile Taxes.

TABLE OF CONTENTS

DIVISION PAGE

VIII. Public Resources and Utilities 259
Federal Surveys and Maps.—State Geological Surveys.—Reclamation and Irrigation.—Public Lands.—Public Utilities.—Water Supply.—Street and Highway Traffic.

IX. Defense and Armament 288
The United States Army.—Administration of Veterans Affairs.—Waterways and Harbors.—Operations of United States Naval Forces.—Naval Construction and Equipment.—Naval Aeronautics.—Naval Education.

PART FOUR: ECONOMICS AND BUSINESS

X. Business and Finance 357
Economic and Business Conditions.—The Security and Money Markets.—Banking Affairs.—Trust Business.—Foreign Exchange.—Foreign Trade.—Foreign Tariffs and Commercial Policies.—Public Protection of Investors.—Life Insurance.—Fire Insurance.—Marine Insurance.—Casualty and Miscellaneous Insurance.—Financial Chronology.

XI. Agriculture and Allied Industries 429
Conditions in Agriculture.—Cotton and Grain Crops.—The Dairy Industry.—Diseases of Plants.—Insect Pests and Plant Quarantine.—Fisheries.—Forestry.

XII. Mineral Industries 462
Gold and Silver.—Iron and Steel.—Coal and Coke.—Non-Ferrous Metals.—Petroleum.

XIII. Manufactures and Transportation 486
Conditions in Manufacturing.—Conditions of Internal Commerce.—The United States Tariff Commission.—Administration of Tariff Laws.—Railroads.—Highways.—The Motor Bus Industry.—Community Transit.—Merchant Marine.—Commercial Aviation.

PART FIVE: SOCIAL CONDITIONS AND AIMS

XIV. Immigration and Population 540
Race Conditions in the United States.—Population Statistics.

XV. Social Problems and Conditions 552
Public Social Work.—Private Social Work.—Crime Control.—Housing.

XVI. Labor and Labor Legislation 576
Labor Conditions and Activities.—Employment Conditions and Statistics.—Child Labor.

XVII. Religion and Religious Organizations 604
Protestant Denominational Activities.—Interdenominational Activities.—The Roman Catholic Church.—The Eastern Churches.—Judaism and Jewish Communal Affairs.

PART SIX: SCIENCE—PRINCIPLES AND APPLICATION

DIVISION PAGE

XVIII. Mathematics and Astronomy 645
Mathematical Organizations.—American Mathematical Society.—Mathematical Association of America.—National Council of Teachers of Mathematics.—National and International Developments.—Publications.—Origin of Planets.—Sun.—Comets.—Double Stars.—Asteroids.

XIX. Engineering and Construction 658
Structural Engineering.—Mechanical Engineering.—Electrical Engineering.—Radio.—Technical Advance in Sound Films.—Automotive Engineering.

XX. Geophysical Sciences 701
Earthquakes and Volcanoes.—Economic Geology.—Mineralogy and Petrography.—Terrestrial Magnetism and Electricity.—Meteorology and Climatology.—American Exploration.—Oceanography.

XXI. Chemistry and Physics 727
Physical Chemistry.—Physics.—Organic and Inorganic Chemistry.—Electrochemistry.

XXII. Biology 744
Organic Evolution and Genetics.—Entomology.—Botany.—Economic Botany.

XXIII. Medical Sciences 765
Medicine.—Physiology.—Pathology.—Surgery.—Public Health and Hygiene.—Vital Statistics.

XXIV. Philosophical Sciences 787
Psychology.—Philosophy.—Anthropology and Ethnology.

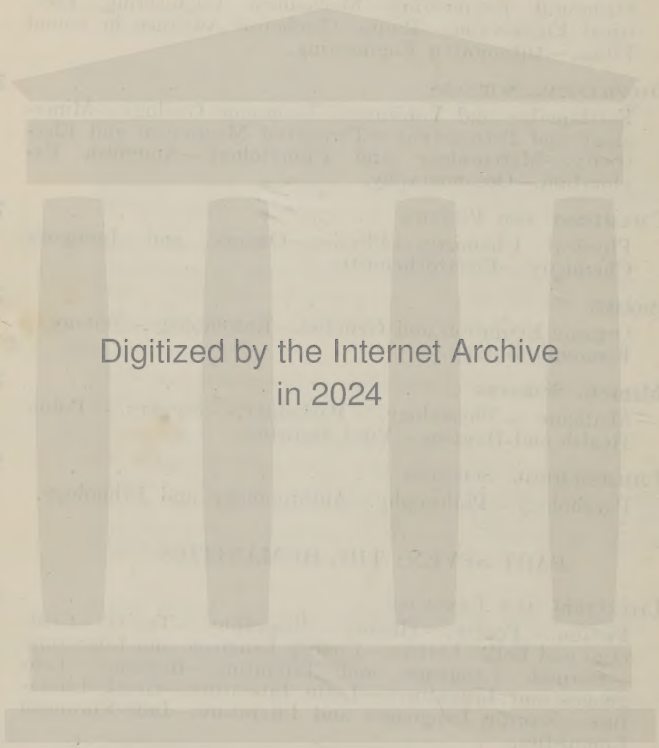
PART SEVEN: THE HUMANITIES

XXV. Literature and Language 815
Fiction.—Poetry.—History.—Biography.—Travel.—Criticism and Belles Lettres.—English Language and Literature.—German Language and Literature.—Romance Languages and Literatures.—Latin Literature.—Greek Literature.—Semitic Languages and Literature.—Indo-European Linguistics.

XXVI. The Arts 869
Archaeology.—Painting.—Sculpture.—Architecture.—Music and the Opera.—The Theatre.—Motion Pictures.

XXVII. Education 910
Elementary Education.—Secondary Education.—Collegiate Education.—Education for the Professions.—Vocational Education.—Adult Education.—Negro Education.—Libraries.

Index 977



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THE AMERICAN YEAR BOOK

THE AMERICAN YEAR BOOK

A RECORD OF EVENTS AND PROGRESS

PART ONE

HISTORICAL

DIVISION I

AMERICAN POLITICAL HISTORY

THE PRESIDENT AND HIS POLICIES

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NEUTRALITY AND FOREIGN TRADE

Seeking solutions for depression problems in his first term, the President declared that national recovery was in no small measure dependent upon an improvement in world economic conditions, and, at that time, he demonstrated a desire to accept responsibility for American leadership in world affairs. However, following the collapse of the world economic conference and the embarrassment incident to the Italian-Ethiopian conflict and subsequent strife and unrest in Europe, the Administration underwent a change of mind in favor of a more nationalistic approach to domestic problems.

The decision was somewhat difficult. The President was induced to take advantage of expanding world markets; yet, at the same time, he was urged to avoid any foreign commitments which would involve the United States in the event of a major European war. This policy of indecision or divided interest is clearly mirrored in executive demands for permanent neutrality legislation, and an extension for three years of the right to negotiate reciprocal trade agreements. In these demands the President expressed his desire to break down international trade barriers for peace-time trade and, at the same time, his willingness to forego the benefits of international trade in the event of a foreign war. The foreign problem was further complicated in 1937 by the increase in alien investments in the United States, and the American gold policy which is rapidly draining foreign reserves.

Faced by the early expiration date (April 30, 1937) of the stop-gap neutrality act of 1935, administration leaders in Congress worked in close touch with the State Department in search of a neutrality formula which would satisfy the President and at the same time appease those groups who were demanding legislation in the form of a mandatory embargo. Although it was generally known that the President was opposed to

mandatory legislation, he hesitated, in the face of the rapidly growing peace-at-any-price movement, to appeal directly for broad discretionary powers. Finally, after a series of White House conferences, the President commissioned Secretary of State Cordell Hull to sound out congressional opinion on a policy much more flexible than that advocated by the Nye-Maverick group. The President refused to use personal influence, but the State Department was unwavering in its efforts to get from Congress a neutrality act which vested broad discretionary powers in the Executive.

The case in favor of mandatory provisions was materially weakened when Secretary Hull was compelled, contrary to administrative policy, to issue licenses for the shipment of munitions into war-torn Spain. An appeal to Congress cured the defect in the temporary law. The incident was used to good advantage in support of the contention that a neutrality policy, in order to be effective, must be so drafted as to allow the President wide latitude in its administration.

The law as finally adopted vested in the President broad discretion in determining when the provisions of the act should become effective and in the control of commerce in non-munitions with warring nations. Once the law became effective, pressure was at once applied to compel the President to recognize the Spanish conflict and, more recently, the situation in the Far East. The Executive has insisted, however, that a "technical state of war" does not exist in either case. This declaration, not entirely consistent with his Chicago pronouncements, was in part prompted by an unwillingness to add greater inequalities to an already unequal study. Further, the mandatory provisions, once the law was invoked, would deprive the President of the executive freedom which he believes essential in the management of foreign affairs. The President's attitude indicates thorough dissatisfaction with the neutrality law and tends to support the contention that our foreign policy—whatever that policy may be—should be dictated from the White House.

Following his second inauguration, one of the first acts of the President was to request Congress for a three-year extension of the Trade Agreement Act. In seeking this extension, the Executive joined with Secretary Hull in emphasizing the value of the agreements as instruments for the building of "durable peace through economic prosperity." Guaranteed a three-year extension, Secretary Hull continued hopeful that an agreement with Great Britain could be negotiated.

"GOOD NEIGHBOR" POLICY

The President continued his "good neighbor" policy toward the American republics. In his annual message, he spoke in glowing terms of the spirit of co-operation and friendship apparent in the Buenos Aires conference and praised the American republics for their continued faith in democratic institutions. Later he urged the Senate to approve the treaties and conventions drafted at the Buenos Aires conference. The President admitted a modification of a policy of long-standing in re-defining American interests under the Monroe Doctrine.

THE CHICAGO SPEECH

A second and more important change in American foreign policy was propounded in a Chicago speech, in which the President indicated that a threat of international anarchy compelled the United States to abandon its traditional policy of "isolation" and "statutory" neutrality and join with other peace-loving nations in the re-establishment of world stability and "international morality." Deploring the rapidly spreading evil of war, the President recommended concerted world action in the establishment of a quarantine for aggressor nations. On the following day the State Department issued a statement branding Japan as an aggressor and a treaty violator; and soon thereafter the President named a representative to the Nine Power

Treaty Conference, scheduled to meet in Brussels in an attempt to settle the Sino-Japanese conflict by mediation. The failure of the Brussels conference, the aggravated Far Eastern situation and matters of domestic concern have delayed "the search for peace" through concerted world action.

FAR EASTERN POLICY

In the meantime America became more and more involved in attempting to formulate a policy on the Sino-Japanese trouble. Determined not to invoke the neutrality act and, yielding to pressure, on the one side from the peace-at-any-price group and, on the other, from the "protect-our-rights" group, the President has pursued a policy of uncertainty. American nationals have been ordered to leave China or remain at their own risk; at the same time, American forces—somewhat augmented—have been retained for the protection of national interests. Government owned ships have been forbidden to carry arms and munitions to the "undeclared war" area; at the same time, private American trade has continued unrestricted.

Encouraged by this policy of vacillation, and, certain that the President will refuse either to involve the United States in war or to invoke the neutrality act, Japan has become increasingly bolder in her aggressions. Likewise, the position of the President has become increasingly difficult. Charges of the desecration of the American flag, followed closely by the bombing of an American gunboat, compelled the President to take unprecedented action. On Dec. 13, he requested in an initialed memorandum, that the matter of the bombing be laid before the Emperor, and that the Japanese Government be prepared to present to this Government "(a) Full expressions of regret and proffer of full compensation; (b) Methods guaranteeing against a repetition of any similar attack in the future." The close of the year witnessed a diplomatic shakeup which was interpreted as a movement to strengthen foreign policy and create a better understanding among the democratic governments.

(For discussion of relationship of the President to Congress, see "The Year in Congress," pp. 11–31).

FISCAL POLICY

In presenting his budget message on Jan. 8, 1937 the President optimistically predicted a balanced budget, exclusive of debt charges, for 1938, and a complete balance for the fiscal year 1939. These estimates were based upon anticipated decreases in expenditures and increases in revenue. Rapidly improving economic conditions led the President to believe that emergency spending could be greatly curtailed or even suspended. These conclusions were predicated upon the assumption that business would continue to improve and that Congress would retain all existing sources of revenue. The message indicated no drastic changes in fiscal policies beyond a gradual reduction in emergency spending. However, business was warned to speed up its program of re-employment. A fiscal balance, the President believed desirable, but he declared it to be contingent upon and subordinate to relief needs. "This government," he said, "does not propose . . . to allow American families to starve."

Evidences of executive over-confidence were shortly noticeable, and it soon became apparent that a balanced budget could be realized only through enforced economies or an increase in the tax burden. The course pursued by the President demonstrated a notable change in White House policy: greater emphasis was to be placed upon planned economies, relief and recovery expenditures were to be drastically reduced, business was to be encouraged to promote the recovery program and government was to undertake the enforcement of a more equitable distribution of economic returns. In execution of this policy, the President ordered dismissals from relief rolls, revision downward of all expenditure schedules, the elimination of all cancelled commitments in both the R.F.C. (Reconstruction Finance

Corporation) and the P.W.A. (Public Works Administration) as possible budget charges, a discontinuance of R.F.C. commitments, drastic reductions in Federal support of public works programs and the liquidation of certain emergency agencies. Secretary of the Treasury Morgenthau summed up the case for economies in pointing out that a budget balance could be struck only "by focusing attention on the several classes of expenditures that have been mainly responsible for our past deficits, namely, public highways, public works, unemployment relief and agriculture. . . ." In spite of an ever-increasing deficit, the President declared that there would be no further public borrowing; the deficit would be overcome through systematic economies, the liquidation of certain emergency agencies, and book charges against social security reserves.

The fiscal policy contemplated no changes in the tax structure; the much criticized undistributed profits tax was to be retained, and the President recommended that the miscellaneous internal revenue taxes be continued. However, following the unexpected decrease in the tax returns, the President presented to Congress a demand for a thorough examination of the tax structure and the enactment of legislation to prevent further tax evasions. Secretary Morgenthau said that his Department, at the request of the Executive, was undertaking a comprehensive study of the entire tax policy and would present its findings to Congress as a basis for future legislation. He declared, however, that the object of the investigation was not to increase the tax burden. This statement was widely interpreted as a preliminary declaration against business taxes. The President, in his message to the special session, did little to define further the tax policy. "Unjust provisions," he said, "should be removed provided such removal does not create new injustices." Attention should be given "to lightening inequitable burdens on the enterprise of the small business men of the nation." However, he positively declared against any revision "which involves a reduction in the aggregate revenues or an increase in the aggregate tax burdens of those least able to bear them."

In spite of severe criticism, the President continued throughout the year the policy of governmental purchases of gold and silver. At the close of the year the silver purchase price for 1938 was reduced by executive order from 75.57 to 64.64 cents per ounce. No explanation for this reduction was made; however, it should be noted that the new price is that fixed in 1933 when the program was initiated. The order applied only to domestic minings for 1938, and reserved to the President the right to revoke or modify the policy at any time within the year.

JUDICIAL REORGANIZATION

On Jan. 6, 1937 in his first message to the 75th Congress, the President called attention to the necessity for immediate and drastic reorganization of the judicial branch. The people are demanding, he said, that the courts co-operate with the legislative branch in order that the "conceded powers or those legitimately implied shall be made effective instruments for the common good." The courts as then organized, he believed, could not be depended upon to make "democracy succeed." He declined, however, to disclose his plan, except to imply that reforms could be found within the framework of the Constitution.

Addressing the Congress directly upon the subject, on Feb. 5, the President presented his proposals to "invigorate all the courts by the persistent infusion of new blood" and to eliminate delay and expense in litigation. Among other things the President's plan contemplated a judiciary of younger men. Anticipating the enactment of a law which would permit all justices to retire at the age of seventy at full pay, provided they had held commissions for at least ten years, the plan provided that, for each qualified justice

who failed to take advantage of the retirement provision, the President should be authorized to appoint (within limits) an additional justice. Greater flexibility in assignments was contemplated in the recommendation that any circuit or district judge "hereafter appointed" could be designated for service in any circuit or district where his services might be deemed necessary. The plan provided also for the appointment of a "Proctor" by the Supreme Court to assist the Chief Justice in directing and supervising the work of the Courts. Other, but less controversial, provisions dealt with matters of direct appeal from the district courts to the Supreme Court, and with the right of the United States to be notified and authorized to participate in certain types of cases.

His message was accompanied by a fully drafted bill and a supporting letter prepared by the Attorney General. In his message, the President explained and justified both the necessity for reform and the procedure selected. He found justification for the proposed procedure in historical precedent and pointed out that the Constitution imposes upon Congress an obligation "to maintain the effective functioning of the Federal Judiciary. . . . These proposals do not raise any question of constitutional law." It was the one effective method short of constitutional amendment; an amendment he definitely rejected because of the uncertainties and delays involved.

In justifying the nature of his proposals for judicial reform, the President avoided a direct attack upon either the Supreme Court or the function of judicial review. He stressed rather "the law's delay," attributable, in his opinion, in no small measure to the age and infirmities of the incumbent judges. The work "involved in the average law cases today is vastly greater and more complicated than even twenty years ago. . . . The modern tasks of judges call for the use of full energies." Likewise, he believed, that older men were unable to view modern, complex problems in a proper perspective. "A lowered mental or physical vigor leads men to avoid an examination of complicated and changed conditions. . . . [They] cease to explore or inquire into the present or the future." His proposal "for a constant infusion of new blood," the President believed, would work a permanent reform without disturbing the traditional forms or functions of the American system. Furthermore, the proposal did "not suggest any form of compulsory retirement for incumbent judges."

Obviously pleased with the expressions of surprise and indignation with which his proposals were greeted, the President carefully chose his time to carry the issue to the people. Speaking in Washington on the occasion of the Democratic Victory Dinner, he declared that a crisis had been reached in the conduct of our domestic affairs, and implied that democracy would fail unless action was immediately taken to secure "economic freedom for the wage earner and the farmer and the small businessman." But, he concluded, democracy need not fail. "And we propose not to let it fail!" Success or failure will be dependent upon whether or not "the three-horse team of the American system of government will pull together." With this as his point of departure, the President launched an attack against the court, charging, by assertion and implication, that political and economic democracy was being paralyzed by judicial interpretations of the Constitution.

On the evening of March 9, in a "fireside chat," the President again carried his fight for judicial reform to the electorate. At that time he again had reference to his parable of "the three-horse team" and, in answer to his critics, said that he spoke for the American people. It is they, he said, who demand that the courts co-operate with the legislative branch in the solution of current social and economic problems. If the problems are to be solved, the President continued, "we must have judges who will bring to the courts

a present-day sense of the constitution—judges who will . . . reject the legislative powers which the courts have today assumed." If the proposal were adopted, the President pledged that he would not appoint to the court "spineless puppets" to do his bidding, but that he would appoint "Justices worthy to sit beside present members of the Courts" —Justices, "who will act as Justices and not as legislators. . . ." His plan, he said, "is no attack on the Court; it seeks to restore the Court to its rightful and historic place in our system of constitutional government. . . ."

Having thus presented his case to the country, the President began a southern vacation apparently confident that his recommendations would meet with Congressional approval. However, the proposal set in motion a series of events which compelled the President, first, to modify his demands and, finally, to agree to abandon, for the session, his hopes for judicial reform. Insisting that social progress was dependent upon the establishment of a more "liberal-minded" court, the President rejected all early compromise proposals; however, finally convinced that an attempt should be made to salvage something, he authorized Senator Robinson to effect a compromise agreement. When death removed from the Senate his ablest adviser, the Executive was compelled to admit defeat.

However, the series of circumstances which had contributed to the defeat of the proposal did not change the executive mind on the matter of the necessity for reform. The President was not impressed with the liberal record of the Court; he continued to regard the liberal margin as too narrow and too unstable; he believed that in the appointment of a single liberal justice he would be unable to restore to the Court a proper balance; and, finally, he complained against the Court's early adjournment. The President expressed resentment in signing the "Wheeler compromise," and, thereafter on several occasions, indicated that he did not consider the question closed.

With no accurate gauge of the extent of the opposition which the Court fight had engendered in the Senate, the President in selecting a successor to Justice Van Devanter, faced a second judicial dilemma. Determined to nominate a confirmed liberal, he hesitated to present a name which might precipitate a controversy; on the other hand, a recess appointment was certain to be regarded as a deliberate attempt to avoid the constitutional mandate. Traditional procedure in the Senate provided an answer: nomination of a member of that body would estop protest and insure immediate confirmation. In presenting the name of Senator Hugo L. Black of Alabama, the President won a signal victory; confirmation followed almost as a matter of course, and the liberal majority on the Court was increased by one. The President wisely refused to be drawn into the post-appointment controversy concerning Justice Black's alleged activities in the Ku Klux Klan.

ADMINISTRATIVE REORGANIZATION

In his annual message, the President declared that a point has been reached "where our administrative needs comprehensive overhauling." On Jan. 12, 1937, he addressed a message to Congress devoted exclusively to this problem. In this latter message, he noted the rapidly expanding activities of government and set forth in contrast a condition of stagnation in methods of public management. Observing that the struggle of our forefathers had been for the establishment and preservation of self-government, the President implied that this national heritage was now endangered by bad management. "Our struggle now is against confusion, against ineffectiveness, against waste, against inefficiency." The problem is one, he urged, which demands immediate attention. As a basis for action he transmitted the report of the Committee on Administrative Management and recommended it as "adequate, reasonable, and practical."

In recommending this report to the consideration of the Congress, the President urged a centralization of administrative authority and a definite fixing of responsibility in the Executive, who in turn would be held accountable to the Congress through the establishment of a genuine independent post-audit. He proposed further to augment the White House staff, strengthen and develop the managerial agencies of government, extend the merit system upward, outward and downward, and departmentalize the administrative agencies.

These recommendations were set forth in a five-point program:

1. Expand the White House staff so that the President may have a sufficient group of able assistants in his own office to keep him in closer and easier touch with the widespread affairs of administration, and to make the speedier clearance of the knowledge needed for Executive decision.

2. Strengthen and develop the managerial agencies of the Government, particularly those dealing with the budget and efficiency research, with personnel and with planning, as management-arms of the Chief Executive.

3. Extend the merit system upward, outward, and downward to cover practically all non-policy-determining posts; reorganize the civil-service system as a part of management under a single, responsible administrator, and create a citizen board to serve as the watch dog of the merit system; and increase the salaries of key posts throughout the service so that the Government may attract and hold in a career service men and women of ability and character.

4. Overhaul the 100 independent agencies, administrations, authorities, boards, and commissions, and place them by Executive order within one or the other of the following 12 major executive departments: State, Treasury, War, Justice, Post Office, Navy, Conservation, Agriculture, Commerce, Labor, Social Welfare, and Public Works; and place upon the Executive continuing responsibility for the maintenance of effective organization.

5. Establish accountability of the Executive to the Congress by providing a genuine independent post-audit of all fiscal transactions by an auditor general, and restore to the Executive complete responsibility for accounts and current transactions.

In proposing this program, the President denied that he was seeking to increase the powers of his office. "What I am placing before you is not the request for more power, but for the tools of management and the authority to distribute the work so that the President can effectively discharge those powers which the Constitution now places upon him." It is interesting to note that economies in government were not advanced in support of this plan; and for that reason Senator Byrd of Virginia declared that he felt obligated to present a counter-report based on "simplicity, economy and reduction of personnel." In resubmitting his recommendations to the special session, the President accepted this economy challenge. He warned that large savings could be realized only by curbing or eliminating functions, and raised the question: "Which functions of government do you advocate cutting off?"

RELIEF, RECOVERY AND REFORM

As he so clearly stated in outlining his fiscal policies, the President was convinced that recovery had advanced beyond the necessity for further "pump-priming" activities; improved business conditions throughout the country prompted the conviction that private industry must once again accept the responsibilities for the establishment of a balanced economic order and, thus, justify the gradual withdrawal of public funds for relief and welfare purposes. The adoption of this policy did not signify that the President had lost interest in the problems of the underprivileged; it meant only that the emergency was past and that the resources of the National Government would now be mobilized

in an effort to eradicate old evils and insure a more equitable distribution of economic returns. Direct relief was to be superseded by Federal direction, supervision and indirect benefits. It must be noted that the President believed that, if democracy were to answer this challenge, reforms must be undertaken in the judicial and administrative branches of the government.

In announcing that the Administration had "begun to move against conditions under which one-third of this Nation is still ill-nourished, ill-clad, and ill-housed," the President did not signalize an abrupt withdrawal of Federal relief funds. He requested from Congress an unearmarked appropriation of $1,500,000,000 to carry the relief program through the fiscal year of 1938; he recommended an extension of the P.W.A., on a protracted scale, for a two-year period; and he requested that the C.C.C. (Civilian Conservation Corps) be recognized as a permanent governmental agency. With the warning that a public works program "cannot be handled forever on a catch-as-catch-can basis," he recommended a well-planned $5,000,000,000 program to be spread over a six-year period. Late in the year, as a stimulus to business, the President recommended that grants-in-aid for the purposes of highway construction be cut by approximately 50 per cent, and that the credit facilities of the government be used to encourage a housing program. This part of the program included also a change in farm policy which called for drastic reductions in direct subsidies.

The second New Deal envisaged a changed social and economic order in which labor, industry and agriculture (and the several departments of the government) would be compelled to co-operate "to meet the unanswered challenge of one-third of a nation ill-nourished, ill-clad, ill-housed." The objectives of the program were essentially those of the outlawed N.R.A. (National Recovery Administration) and A.A.A. (Agricultural Adjustment Administration); but, in recognition of the difficulties involved in attempting to do too much within the scope of a single statute, the President recommended not a single comprehensive law, but a series of enactments dealing with the various phases of labor, business, agriculture, housing and conservation.

LABOR

With social security and collective bargaining firmly established as the basis of a national labor policy, the President prepared to push his program for further reforms and moved at once for the establishment of maximum hour and minimum wage standards and the elimination of child labor. "The time has arrived," he said, "for us to take further action to extend the frontiers of social progress." The President was aware of the magnitude of the task and recognized that he was only inaugurating a program which would require years to complete. He did not insist upon the immediate creation of uniform standards for the entire country but urged the adoption of a flexible policy upon which industry could progressively better labor conditions. Although one cannot doubt the sincerity of the President in seeking to improve labor conditions and increase the laborer's purchasing power, there is some doubt as to whether he has a well formulated long-time program which takes full cognizance of labor's place in industry and politics. This question concerning the President's policy is predicated upon his refusal to take a definite stand on strike issues, his early rebuke of John L. Lewis, of the C.I.O., his "a plague o' both your houses" speech, and his refusal to intercede in an attempt to bring the American Federation of Labor and the Committee of Industrial Organization together.

BUSINESS

At the time of his re-election, the President was intent upon the enactment of a second N.R.A. for the regulation of business. In his annual message, he declared in favor of the broad objectives of the original

law and added: "The statute of the N.R.A. has been outlawed. The problems have not." In his Victory Dinner address he reaffirmed his intention to move forward. Although the President had plainly said that he did not propose to repeat the mistakes of the N.R.A., *i.e.*, attempt to accomplish too much in a single statute, a definite policy was never clearly formulated. What plan for the regulation of business may have been contemplated is in part a matter of inference. Although there are many reasons to believe that he favored a single industrial code, the President, in actively supporting the new Guffey bill, may have disclosed the plan he proposed to pursue, namely, the independent organization of each industry under a code of fair competition, eliminating from such codes all direct references to wages and labor practices with some co-ordinating agency for competing industries. This proposal, whether interpreted from the point of view of the single code for all industry or that of a series of individual codes, would have restored the monopolistic features of the old N.R.A.; yet, at the same time, the President declared himself in favor of a general strengthening of the anti-trust laws and encouraged renewed vigor in their administration. These conflicting policies may be reconciled upon either of two assumptions: either that the President did not consider that all businesses were ready for direct supervision and that those which were not should for the time being be subject to indirect supervision through the anti-trust laws, or that industry should voluntarily seek supervision within the codes, and that a more rigorous application of the anti-trust laws would induce the more independent units to come within its provisions. The exact direction of the policy was never fully revealed.

Labor difficulties arose to blight recovery and, before the close of 1937, the President was again absorbed in the task of mobilizing national resources to offset the acknowledged business recession. His efforts in this direction were indicative of a sharp change in policy wherein he openly solicited the co-operation of business and sought to inspire confidence in government. In his attempts to stimulate business activities and to induce private capital to seek productive investments, he indicated a willingness to manipulate rediscount rates, limit public borrowing and lending, relax security rulings, re-examine the tax structure, pledge public credit to insure housing loans, and enter into an agreement with the utility interests.

AGRICULTURE

Agricultural relief and the stabilization of farm incomes were regarded by the President as among the most important of his proposals for the social and economic rehabilitation of the American people. Upon the outlawing of the A.A.A., the Administration devised the soil conservation program as a temporary expedient and moved immediately toward the formulation of a stronger and more comprehensive agricultural policy. The general objectives of the new policy were summarized by the President in a special message to Congress, in which he declared: "A program of crop insurance and storage of reserves should be part of the foundation of agricultural policy which we are building, and which must include the conservation of soil and water, better land use, increased farm income, and alleviation of distress in rural areas arising out of factors beyond the control of individual producers." In drafting a practical program, the Administration retained soil conservation subsidies and provided for flexible tariff provisions to aid in stabilizing prices on basic commodities. Production, marketing and, consequently, price-fixing controls were deemed essential. In fact, the policy found expression in the form of a statement of "fair agricultural practices" which utilized the taxing and credit facilities of the government to compel compliance. The farmer would be allowed to avoid incurred penalties either by agreeing to reduce acreage

or by storing surpluses. Supplementing these features of the program, the broad policy demanded the withdrawal from production of sub-marginal lands (see conservation), a modified resettlement program, and credit aids to debt-ridden and tenant farmers.

CONSERVATION

An ardent conservationist, the President believed that the United States had reached a period in its national development where the people must become conservation-minded. Nature has given warning, he said, "that we must act while there is yet time if we would preserve for ourselves and our posterity the natural resources of a virile national life." In the past, opportunities for constructive programs had been allowed to slip away. Public works programs promoted on a "catch-as-catch-can" basis could, with thoughtful planning, be directed toward the conservation of native wealth. To this end, he recommended a $5,000,000,000 public works program to be spread over a period of six years, with a major portion allocated to water conservation and flood control projects. He requested, also, a long-time conservation program for the "Dust Bowl" area. In transmitting to Congress the report of the Great Plains Committee, he recommended the development of a new economy for the area "which represents generally a more rational adjustment of the organization of agriculture and cropping plans and methods to natural conditions." Although his recommendation for the establishment of seven regional planning agencies was generally accepted as a request for the development of power, the President in his message emphasized the importance of these authorities in the development of "integrated plans to conserve and safeguard the prudent use of water, water power, soils, forests, and other resources. . . ." It should be noted also that the President had recommended a national planning board as a permanent administrative agency.

POWER

In terminating the "power pool" conferences, and in appointing a commission to study power questions, the President indicated a drastic change in power policies which threatened to plunge the government into active competition with private utilities. This conviction was strengthened when the President recommended the appointment of an administrator in the Department of the Interior to supervise the sale of power at Bonneville and, at the same time, said that the Administration "should be authorized to acquire, by eminent domain if need be, such real and personal property, franchises, electric transmission lines and facilities as may be necessary" to encourage a wide use of electric energy. These requests were followed in June by a message in which the President urged the creation of seven regional authorities. Although emphasis was placed upon planning and conservation objectives, the message was nevertheless indicative of an emerging power policy. "The water power resources of the Nation," the President declared, "must be protected from private monopoly and used for the benefit of the people." However, the 1937 power program retreated before the business recession, and the President turned again to a policy of conciliation in an attempt to induce further investments in private utilities.

HOUSING

The President was committed to a nation-wide housing program as a part of his general policy for the social and economic rehabilitation of the underprivileged. Early in 1937 the Wagner-Steagall bill won executive approval, but its rather modest objectives were overshadowed when the President proposed housing as "an important part of the program for increasing general business activity and employment during the coming year." Housing was described as the "most promising single field for private investment." The proposal was advanced to encourage productive investment

for private capital and thus placed no immediate burden upon the Treasury; however, the credit of the government was to be pledged to secure private capital. In urging a comprehensive program the President said: "I recommend that the Congress adopt at this time measures to facilitate the financing of every type of housing construction, whether for sale or for rent, and ranging from the small house to entire residential communities and large low-rent apartment buildings." He recommended further that "provisions be made for an extensive program of repairs and modernization." The President warned that, in the adoption of the program, provisions must be included to prevent a sharp upturn in construction and financing costs.

THE YEAR IN CONGRESS

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THE PRESIDENT AND CONGRESS

Chosen in the landslide election of 1936, the members of the 75th Congress convened Jan. 5, 1937 for their first session in an atmosphere of "profound awe of the unprecedented popularity of Franklin D. Roosevelt." So impressive was the President's personal victory and so evident the fact that a great many of the members of Congress owed their election entirely to the tenacity with which they clung to his coat tails that there were many who predicted that the 75th Congress would conceive of its duty as "having the courage of the President's convictions."

But, however harmonious was its inception, the 75th Congress quickly developed major problems upon which its members were either hopelessly divided or else aligned against the man who had elected them. Most fundamental and most disruptive of these conflicts was that precipitated by the President on Feb. 5, 1937 with the introduction of his proposal for judicial reform. It has well been said of this session that "its most notable contribution to history was the rejection by the Senate of President Roosevelt's plan for reorganization of the United States Supreme Court."

Significant as was the President's defeat on the Court issue, of even greater social and economic importance was his attempt—still unsuccessful at the close of 1937—to persuade Congress to adopt a labor standards bill to replace the invalidated National Industrial Recovery Act and some form of crop control legislation to fill the gap created by the Supreme Court's invalidation of the Agricultural Adjustment Act. While it is true that many pages were added to the statute books it is also true that most of them did no more than renew earlier New Deal measures for additional periods of two or three years. As *Congressional Intelligence* observes: "Of thirteen major proposals made by the President, the Congress balked on six, partially conformed on two, and enacted only five largely as suggested. Thus on important New Deal proposals the President's average was about 50%." Furthermore, in the first year of his second Administration, Mr. Roosevelt had as many (two) of his vetoes overridden as in the four years of his first Administration.

Tomorrow's student of history will probably be more interested in the

political forces which caused this Congressional rebellion than in the specific contents of either the accepted or the rejected measures. While a detailed analysis of the political process as it operates in Congress lies somewhat outside the scope of this article it would nevertheless seem pertinent at this point to suggest a few contributory explanations of this amazing overturn of Presidential political prestige.

In the first place, there is some reason for feeling that the derisive "rubber-stamp" was at last beginning to find tender hides among the people's representatives. As we have noted in previous issues of THE AMERICAN YEAR BOOK, most New Deal Congresses have not really been rubber stamps but the phrase has been shouted to the house tops by anti–New Dealers—especially in the Republican press.

To attribute the whole rebellion, however, to overreaction to political opprobrium, is clearly to simplify to the point of meaninglessness. A second and more important basis for the "bolt" was the fact that the first real issue—the Court bill—suggested, without proper political clearance, what was felt to be a fundamental change in the structure of the National Government at a time when the nation was beginning to emerge from the financial cellar. It is important to remember in this connection that at precisely the time the President was suggesting a departure from the *status quo* in order to "implement democracy" the leaders of organized labor were for the first time employing a new and —to many—shocking method of implementing the program of industrial democracy, and that the former change might aid the latter. Either one of the efforts must have had a difficult time of it under the most propitious circumstances. Since they occurred simultaneously in a milieu in which a "return to normalcy" was the dominating desire of wealthy and middle classes, it is surprising that the court plan did not fail more completely than it did. Major constitutional changes cannot be made under such circumstances, without Congressional and Cabinet co-operation—by even the most popular of Presidents.

A third, less significant reason for Presidential difficulty with Congress is one noted often before. Second-term Presidents will not again face the polls with Congressmen of their own party—a fact which destroys much of the reason for mutual co-operation, especially from the viewpoint of the legislator.

Fourth, but of even less importance, is the increased legislative power of certain conservative Democrats. After four years of Democratic control, there was more experience and, hence, more knowledge of means of combating the Administration floor leader who, by a curious tradition, must remain faithful to the President, even if all the legislators whom he is supposed to lead have deserted the President.

Whatever the causes or the justice of the rebellion it is important to us if only because the Court proposal which precipitated it was discussed at such length and with such absorbed intensity that all but the most routine matters were neglected from February until the middle of May. Thus it was that the important Wages and Hours bill was not introduced until May 24 while the President's crop control legislation was held until June, and almost all of the other relatively important measures had yet to be passed when the usual time for adjournment had been reached. Such important problems as regional planning and development, the strengthening of the anti-trust laws, regulation of trade unions, and a variety of constitutional amendments went without consideration on the floor of either House.

PARTISAN POLITICS

This section in previous years has been devoted to discussions of party line-ups for the most part rather than to detailed discussion of factional alignments within either of the two parties. This year more attention must be paid to the latter

if the politics of the session are to be properly understood. That this is not misplaced emphasis is evidenced by the fact that both of the major factions within the Democratic party are larger numerically than is the Republican party as a whole.

As a result of Mr. Roosevelt's overwhelming sweep through the polls in the preceding November, there were 76 Democrats, two Farmer-Laborites, one Progressive, and one Independent Republican in the Senate. Only 16 Republicans were left to bear the standards of the "economic royalists." The House was almost as overwhelming: 331 Democrats, eight Progressives, five Farmer-Laborites, and only 89 followers of Landon and/or Hoover.

The impartial observer must admit that the failure of the President's program was in no way due to the activities of the minority party but rather to the recalcitrant groups within his own party. No Republican senator, for example, took part in the debate on the Supreme Court plan. In fact the Republicans agreed to keep still about it. The principal objection came from conservative southern Democrats. Similarly in the House, if it had not been for conservative Democratic members the Wages and Hours bill would not have been pigeon-holed by the Rules Committee. As the extra session drew to a close in the latter part of December it became increasingly clear that the Democratic party was in for a thoroughgoing housecleaning in the process of which liberals and conservatives would be sorted into different parties which would more nearly correspond to their economic and social views. It is also interesting at this point to note that the nominally Republican senators. La Follette and Norris, voted regularly with the liberal Democrats in the 27 outstanding roll calls listed by *Editorial Research Reports*.

Nevertheless, the regular Republican party was not dead. In the Senate the Republicans and the Democrats split sharply on party lines upon virtually every issue except those already indicated, the anti-lynching rider, and the Wagner Housing measure, in each of which there was a decided split within the Democratic party. It should be noted that the extent of the party split on the Court plan is not revealed in the actual vote for various reasons which will be given later. The conclusion must be that party discipline is still an important factor in the legislative process as it has operated in the Senate in the last year but that on issues of a fundamental social, economic and political nature it is impossible to maintain allegience to existing party labels. In the absence of a crisis, the basic conservatism of many Democrats drives them into the Republican fold on significant measures.

Much the same situation appears to have prevailed in the House of Representatives. On at least three important measures—the anti-lynching bill, the wages and hours bill and the proposed investigation of sit-down strikes—there was an important and powerful element in the Democratic party which fought the cause of conservatism with considerable vigor and, in one case, with considerable success. Yet on almost all of the other issues the two parties split clearly along party lines. The conclusion drawn in the case of the Senate should apply in this instance as well.

The previous year's article on the same subject cautioned the reader to avoid exaggerating the importance of fundamental economic conflicts in these roll calls and hence in the party structure. While that same word of caution should be spoken in 1937 and probably in the years to come, at the same time it is manifest to those who wish to see that the two Congressional sessions of the year 1937 reflect a growing cohesion of economic interests which may very possibly result in the readjustment of party lines in the years just ahead.

MECHANISM OF CONGRESS

The mechanics of the legislative process were little altered in either of the two sessions of 1937. Of the 27

discharge motions filed during the regular session only one succeeded in securing the signatures of a majority of the members. This discharged the Committee of Rules from consideration of the Gavagan anti-lynching bill. It was a peculiar move because the Rules Committee had no power to consider the bill since it had not at that time been considered by a standing committee of the House.

In the special session the Rules Committee was also discharged of further consideration of the Wages and Hours measure. In this case a Republican–Conservative Democratic group had been keeping the measure bottled up against Administration wishes.

Filibusters, while not as spectacular as on many previous occasions, nevertheless played an important part in the story of the sessions. By reason of faulty execution of the majority leader's orders on one occasion Senator Wagner was permitted the floor long enough to enable him to make the anti-lynching measure the unfinished business. This was followed by a filibuster by a Texas senator which resulted in a compromise—making the bill a special order for consideration in the early part of the ensuing session. However, the special session adjourned without having advanced it.

Again when the compromise judiciary reform bill was introduced and a filibuster threatened, Senator Robinson warned it would be a case of "dog eat dog" and that he expected that his superior physical endurance would enable him to triumph. But more important was the fact that he had the votes to see to it that recesses rather than adjournments were taken each day and also to secure the passage of a rule prohibiting more than two speeches on a given subject in a single day. Thus by interpreting the rule as meaning legislative rather than calendar days it was possible to reduce the total number of speeches made by any one individual on the Court proposal to two. Furthermore the President *pro tempore* ruled that when the speaker yielded to anything other than an interrogation his speech was thereby completed. Robinson's death destroyed his majority and, *ipso facto,* the intricate machinery based thereon. As Professor Altman concludes: "In the failure to complete this experiment in defeating a filibuster by a novel interpretation of the regular Senate rules, it is possible that a valuable precedent for the future was lost." (*American Political Science Review,* December, 1937, p. 1079.)

Despite the failure of Congress to pass many of the major proposals submitted by the Executive it nevertheless passed slightly more laws and resolutions—in sheer quantity—than had been passed in most sessions in recent years. This was due in no small measure to the frequent use of Calendar Wednesday for bills which were not suitable for the Consent Calendar. Thus Professor Altman records that while there were only eight Calendar Wednesdays in the whole of the 74th Congress there were 20 employed in the regular session of 1937 alone.

Resolutions of investigation and inquiry were passed establishing committees to consider such diverse subjects as judicial reorganization, crop insurance, farm legislation in general, flood relief, unemployment and relief, water resources.

THE SENATE AND THE SUPREME COURT[1]

After several months of bitter debate over the President's Supreme Court plan the House enacted several minor parts of the original proposal as a means of hamstringing the larger effort. The Judicial Retirement Act was passed in the hope that it would entice several of the sitting justices to retire and thus permit Mr. Roosevelt to appoint at least one justice to the Supreme Court in the normal method. Justice

[1] This summary draws heavily upon that embodied in an article by O. R. Altman, in the *American Political Science Review,* December, 1937.

Van Devanter retired in June, 1937 at a moment calculated to have the maximum effect upon the Senate Judiciary Committee. With this retirement it became possible for the President to appoint a liberal to the Court and thus secure a majority more or less sympathetic with the objectives of the New Deal. Justice Sutherland retired in January, 1938,—thus further removing the most immediate need for court reform—a fact which the Senate was not slow in realizing.

Shortly after Justice Van Devanter's resignation the Senate almost unanimously nominated its majority leader, Joseph T. Robinson, to fill the vacancy. Advanced by the Democrats as a reward for faithful party service his candidacy—if it may be so termed—was equally acceptable to Republicans who recognized in him an inherent conservative. Agreeable as this may have been to Senator Robinson it was most unsatisfactory from Mr. Roosevelt's point of view for it demanded that he choose between the need for the nomination of a liberal to the bench and the pressure to reward an old friend and faithful supporter. Robinson's death a few weeks later resolved the dilemma; liberalism was to have another spokesman on the high tribunal.

In August the President nominated Senator Hugo L. Black of Alabama to fill the vacancy. After cursory examination of the nominee's record in committee the nomination was reported to the floor of the Senate where it was roundly criticized by a few members, some of them sincere, some of them obviously attempting to further personal political ambitions. Whatever the motives of the latter may have been, developments subsequent to confirmation substantiated Senator Copeland's charges regarding Justice Black's Ku Klux Klan affiliations. Post session evaluation has probably quite generally agreed that both the Senate Committee and the President were derelict in fulfilling their high responsibility of investigating the qualifications of candidates.

JUDICIARY REFORM

As originally presented (Feb. 5, 1937), the principal purposes of Supreme Court reform were declared by the President to be the infusion of new blood by means of the appointment of additional judges for all of those sitting beyond the retirement age of 70, increased speed in the disposition of litigation for the protection of the interests of poor litigants, the correction of the situation arising from the conflicting decisions made by the lower Federal courts in cases involving constitutional questions, and finally, the prevention of the abuse of the power of injunction by some of the Federal courts.

The President's message was accompanied by the introduction of bills in both the Senate and the House. The Senate bill was introduced by Chairman Ashurst of the Judiciary Committee while the House bill was introduced by Representative Maverick after Chairman Sumners of the Judiciary Committee had refused to introduce it himself.

It soon became clear that, ostensible reasons aside, the President's real reason for presenting the proposal was in order to insure a favorable court for the consideration of the New Deal program. Once this was definitely established the support for the measure began to evaporate. The ranks of the Administration's supporters were also thinned considerably by the series of Supreme Court decisions made shortly thereafter upholding New Deal measures, among them the Labor Relations Act and the Social Security Act. Adjournment on June 4 found the Supreme Court without a single New Deal veto on its term's record. A speech of Chief Justice Hughes also aroused opposition. To all of these tide-turning factors must be added the retirement of Justice Van Devanter and the President's consequent opportunity to appoint a liberal to the bench for the first time during his five years in office.

Just prior to Senate consideration of the court plan Majority Leader Robinson advanced a compromise

plan calling for a new judge for each judge of 75 who had not retired, though only one such appointment might be made to the Supreme Court during a calendar year. Whereas in the original bill the enlargements of the court caused by the appointment of additional judges were to be permanent, in the compromise measure vacancies caused by death or retirement were not to be filled unless needed to maintain a full court of nine members. The compromise bill also gave the Attorney General authority to intervene in private litigation where the constitutionality of a Federal law is questioned and to take appeals directly to the Supreme Court.

The ingenious method used to prevent a threatened filibuster and the misfortune it suffered when the death of Senator Robinson caused such confusion that those who suffered by its use were able to move an adjournment (July 14) and thus bring the legislative day of July 6 to a close, have already been noted.

With the death of Robinson came a determined contest for the leadership between Senator Barkley, the candidate of the supporters of the plan, and Senator Harrison, the leader of the opposition group. Barkley was elected by a vote of 38 to 37. For a time it looked as if this had been an Administration victory but shortly thereafter it became known that the President had shelved the idea for the balance of the session. On July 22 by a vote of 70 to 20 the bill was recommitted with instructions to report it back within ten days stripped of all reference to the Supreme Court.

It is significant to remember that almost all of the polls taken between July 10 and July 15 indicated that the Senate stood 42 to 42 with 12 senators as yet undecided. Those who favored the plan included 39 Democrats, one Progressive, one Independent, and one Farmer-Laborite; those who opposed it, 25 Democrats, 16 Republicans and one Farmer-Laborite.

The day before the President presented his reorganization plan the House Judiciary Committee favorably reported a bill permitting the retirement on full pay of all Supreme Court Justices who had reached the age of 70 and had served for ten years. This bill had no direct connection with the President's proposal and hence was passed by the House on Feb. 10, 1937, by the Senate on Feb. 26 and was approved by the President on March 1.

In accordance with the Senate's instructions the Judiciary Committee on July 28 reported out a measure applying only to the lower courts. It provided for the intervention of the Attorney General in suits involving the constitutionality of Federal statutes and for direct appeal to the Supreme Court by the Attorney General or any other party involved. It restricted the power of the lower courts to enjoin enforcement of acts of Congress by requiring a court of three judges, one of them from the Circuit Court of Appeals, to hear and pass on applications for injunctions. The bill was passed in this form in the Senate on Aug. 8 and in the House on Aug. 11 and was approved by the President on Aug. 24.

APPROPRIATIONS

Appropriation bills made their way far more slowly than usual as a result of the Court controversy. It was not until the beginning of the new fiscal year that two bills were passed. Relief was cut slightly, but otherwise money was spent freely, as it became increasingly clear that the great difficulty with "spending our way out of the Depression" was that the President could not persuade Congress to stop the spending. The movement "toward" a balanced budget came nowhere near reaching that goal. A list of major appropriations which has been adapted from the *Congressional Intelligence* will be found in the tabulation on the next page which reveals the huge total of appropriations at $9,355,655,862 of which sum three items exceeded $1,500,000,000 each and one item, that for independent offices, approximated $1,000,000,000 and another (first deficiency) was slightly less.

Agriculture	$ 630,381,208
District of Columbia	45,915,614
Independent Offices	957,738,963
Interior	132,732,499
Legislative	24,085,736
Military	415,263,154
(War Department) Non-Military	194,536,063
Navy	516,258,808
State, Justice, Commerce, Labor	126,127,387
Treas. P. O.	1,503,441,943
1st Deficiency	948,975,868
2nd Deficiency	81,737,540
3rd Deficiency	87,622,634
Relief	1,500,000,000
Miscellaneous	472,271,660
Permanent Annual Appropriations	1,718,566,785
Total	$9,355,655,862

Analysis of the supply bills as they went through the Congressional mill indicates the absence of a firm stand for economy in both the House and Senate. A few millions were altered here and there but no considerable changes made. In some ways, a better indication of the functions for which appropriations were made can be gleaned from the following table:

Purpose	Fiscal year 1938
Relief and work relief	$1,500,000,000.00
Civilian Conservation Corps	350,000,000.00
General Public Works	462,562,811.94
Social Security Act	774,281,000.00
Veterans' Administration	585,832,000.00
National defense:	
Navy	516,543,308.00
Military Establishment	415,263,154.00
Total, national defense	931,806,462.00
Postal Service and Post Office Department (chargeable to postal revenues)	784,748,053.00
Assistance to agriculture	601,629,724.00
Interest on public debt	860,000,000.00
Public debt retirement from ordinary receipts	582,515,000.00
Trust-fund appropriations, including the portion of District of Columbia appropriations chargeable to District revenues	172,473,242.00
Refunds, customs, and internal revenue	61,000,000.00
Federal employees' retirement funds, Government share	73,255,000.00
Railroad employees' retirement account	99,880,000.00
All other activities of Government, including educational and other grants, etc.	536,138,871.97
Total, including postal and trust fund appropriations	$8,376,122,164.91

AGRICULTURE [2]

Sugar Quota Act.—In a special message of March 1, 1937 the President asked Congress to enact new sugar legislation to take the place of the Jones-Costigan Sugar Control Act. The request called for an excise tax of not less than ¾¢ a pound on refined sugar and for renewing the quotas established under the act of 1934. Benefit payments for restriction of crop acreage were to be continued and the quota system extended.

Despite the President's urgent plea, sugar legislation remained deadlocked in the House Committee on Agriculture until the end of June. Executive frustration found release in an explosion on June 15 in which the President characterized the sugar lobbies then at work in the Capitol as "the most pernicious I have ever seen." When the bill finally emerged from committee, it had been altered so as to reduce materially the raw and refined sugar imports from Cuba and to bring down the proportion of refined sugar that might be imported

2 In the outlining of acts and the analysis of many individual acts, the writers have drawn on the review of Hal H. Smith in *The New York Times* for Aug. 22, 1937 and on accounts of the Chamber of Commerce of the United States of America, of *Congressional Intelligence*, and of *Editorial Research Reports*.

from Hawaii, Puerto Rico, and the Virgin Islands. It also reduced the proposed excise tax from ¾¢ to ½¢ a pound. The bill passed the House in substantially this form on Aug. 6 by a vote of 165 to 55.

The Senate Finance Committee advanced a compromise under which "refining quotas" for the United States as well as the insular possessions were proposed. Despite the President's emphatic disapproval, the measure passed the Senate in this form on Aug. 12, *viva voce*. Sent to conference, the bill emerged with Senate agreement to limit the restrictions upon importation of refined sugar from insular possessions to March 1, 1940. At the time of adjournment the bill had not yet been signed by the President and informed sources were beginning to predict a pocket veto. But after more comments upon the character of the sugar lobbies and an agreement on their future activities, the President finally signed the bill.

As finally passed, the Sugar Act calls for the determination by the Secretary of Agriculture for each calendar year of the amount of sugar which will be required by the consumers in the continental United States. It provides that, once this determination has been made, quotas be fixed for domestic and foreign countries in the ratio of 55.59 per cent for the former and 44.41 per cent for the latter. The amount prorated for domestic production would be allocated as follows: domestic beet sugar, 41.72 per cent; mainland cane sugar, 11.31 per cent; Hawaii, 25.25 per cent; Puerto Rico, 21.48 per cent; and the Virgin Islands, 0.24 per cent.

The act empowers the Secretary of Agriculture to make individual allotments when he finds this necessary for any or all of the following reasons: to assure an adequate and orderly flow of sugar in commerce; to prevent disorderly marketing; to maintain a stable supply; to afford all interested persons an equitable opportunity to market sugar within an area quota. In order to insure an equitable distribution under these quota allotments made by the Secretary of Agriculture, the act makes it possible for interested parties to appeal to the courts for review of the Secretary's decisions.

One very important feature of the act is that which provides conditional benefit payments (on a basis of 60 cents per 100 pounds of sugar or liquid sugar, raw value) for compliance by sugar farmers with specified conditions such as not using child labor (less than 14 years), to pay not less than the "fair" wages determined by the Secretary, to keep the amount of sugar marketed within the limits fixed by the Secretary and finally, to comply with the suggested farm practices of the Secretary, including respect for soil fertility, soil erosion, etc.

Until Dec. 31, 1940, there will be an excise tax on all sugar manufactured in the United States (including Alaska, Hawaii and Puerto Rico) of 0.465 cent per pound on sugar testing by polariscope 92 sugar degrees, plus 0.00875 cent additional for each added sugar degree; and of 0.5144 cent per pound on all sugar of less than 92 sugar degrees.

Power is vested in the President to suspend the operation of quotas and benefit payments in time of economic and/or other emergency. He may also make surveys and recommendations with respect to terms and conditions of contracts between producers and processors, and between laborers and producers of sugar cane and sugar beets.

Farm Credit Act.—Introduced by Representative Jones of Texas this act was passed in the House Aug. 2 and in the Senate Aug. 14 and was approved by the President Aug. 19. This act makes a number of amendments to the Federal Farm Loan Act, the Emergency Farm Mortgage Act of 1933, and other statutes dealing with farm and agricultural financing. Its principal purpose is to provide for co-ordination in administration of the various farm credit agencies such as the Federal farm land banks, the intermediate credit banks, and agriculture credit corporations.

In addition to these changes of an administrative nature it also confers upon the Federal Farm Mortgage Corporation powers similar to those vested in the Federal Land Banks and authorizes the corporation to extend loans whenever such action is justified by conditions. The act broadens the list of eligible purposes for which Federal farm land loans might be made to include refinancing of indebtedness incurred before Jan. 1, 1937.

Agricultural Marketing Agreement.—This measure was also introduced by Representative Jones. It passed the House April 19, the Senate on May 24 and was approved by the President June 3. It re-enacts and amends provisions of the Agricultural Adjustment Act relating to marketing agreements and orders. The amendments relate to the basis to be used in orders for marketing agreements and for fixing prices to be paid to milk producers, and provides for the mediation and arbitration of certain disputes between milk producers and handlers of milk.

The act amends Section 8 of the old AAA Act by adding a new paragraph which requires the Secretary of Agriculture, if an order or marketing agreement is to include fixed prices, to ascertain the prices which would represent in purchasing power the equivalent of prices in the base period. If the Secretary finds that the prices thus ascertained are not reasonable, in view of local economic conditions affecting supply and demand in the particular marketing area, he is to fix prices which will reflect these conditions and insure an adequate supply of milk. The order of the Secretary of Agriculture fixing prices would be subject to approval or rejection by a producers' referendum.

Farm Tenant Act.—Action on farm tenancy legislation was strongly urged by the President in a special message of Feb. 16, 1937. After a series of set-backs in committee a bill introduced by Representative Jones of Texas passed the House with compromises on June 29, 307 (252D, 45R) to 26 (8D, 18R). It passed the Senate July 2 without a record vote and was signed by the President July 23.

As finally passed the act authorizes the Secretary of Agriculture to make loans to tenant farmers for the purchase of farms and provides that the loans shall not be for more than 40 years, the rate of interest being 3 per cent. For these long term loans appropriations are authorized of $10,000,000 for 1938, $25,000,000 for 1939, and not over $50,000,000 for each year thereafter. The recipients of these loans will be required to employ the farm practices specified by the Secretary of Agriculture.

This act authorizes and directs the Secretary of Agriculture to develop a program of land conservation and utilization, including the retirement of lands which are submarginal, and loans for rehabilitation of farm equipment and supplies. Appropriations of $10,000,000 for 1938 and $20,000,000 for 1939 and 1940 were made to carry out this program of land retirement. The administration of the act is vested in a newly created agency in the Department of Agriculture to be known as the Farmers' Home Corporation.

Soil Conservation Act.—Under the Soil Conservation Act of 1936 an annual appropriation of $500,000,000 was authorized, but direct payments to farmers were to terminate at the end of 1937. Grants were to be made, instead, to States to carry out state soil-conservation programs. In pursuance of this plan of procedure, the President addressed letters to state governors Feb. 27, 1937, calling for the enactment of state legislation and enclosing a model soil-conservation bill prepared by the Department of Agriculture. Such statutes were enacted by 25 state legislatures during the 1937 sessions.

In the meantime, however, the Jones Soil-Conservation bill introduced on Jan. 26, 1937 calling for a continuation of Federal control of the program, had passed both Houses and was finally signed by the President on June 28. In neither House

had there been substantial opposition to the bill.

As finally passed, the act not only confirms control of the soil-conservation program in the hands of the Secretary of Agriculture but also requires that he make an annual report on certain phases of the administration of the act to Congress. The present provision calls for the cessation of Federal control on Jan. 1, 1942.

Farm Loan Interest Act.—This measure has an interest beyond that which follows from its provisions, for it is one of the two bills in this session which were vetoed and subsequently repassed. Since 1933 the interest rates on governmental loans to farmers had been set at emergency low levels. The 1933 act called for return to the usual levels of 4 and 5 per cent in the fiscal year 1939. The bill introduced April 29 by Representative Biermann (D. Minn.) called for a continuation of the emergency rates (3½ and 4 per cent). It passed the House June 7, almost without opposition, and the Senate on June 29 with but little more.

In his veto message of July 12 the President said that there had been a large increase in farm prices and incomes since 1933 and that he felt that it was no longer necessary for the government to continue to subsidize Federal Land Bank interest rates below the unprecedentedly low rate these banks are now offering farmer-borrowers on a business basis. The President's comments apparently fell on deaf or at least unconcerned ears, for the House overrode the veto the following day by a vote of 260 (189D, 62R) to 98 (90D, 7R). The Senate waited better than a week and then on July 22 took similar action by a vote of 71 (53D, 15R, 2F.L., 1P) to 19 (18D, 1R).

General Agricultural Program.—The question of whether or not the Administration would endeavor to secure the adoption of a new crop control program to replace the invalidated AAA (Agricultural Adjustment Administration) remained in doubt until the latter part of June when the President definitely announced that he would send letters to the chairmen of the appropriate committes in either House, urging the passage of legislation embodying the essentials of the "ever-normal granary" plan previously announced by Secretary of Agriculture Wallace. This plan called for a storage reserve system for the five major nonperishable commodities ordinarily produced in surplus quantities—wheat, cotton, corn, rice and tobacco.

The Wallace plan was embodied with some variations in two bills introduced during the session, the one by Senators Pope and McGill on July 15, the other by Chairman Jones of the House Agriculture Committee on July 20. However, Congress adjourned without having passed either of the two proposals.

On Aug. 13 the Senate resolved, without a record vote, that general farm legislation would be "first to engage the attention of Congress upon its reconvening." On Aug. 20 the House approved the Senate resolution by a standing vote of 193 to 36. The preamble to this joint resolution declares it to be the sense of Congress that permanent farm legislation should be based on principles recognizing the right of the farmer to a fair share in the national income and the right of the consumer to be protected against consequences of droughts, floods and pestilences causing abnormally high prices, by the storage of supplies in good crop years for use in time of failure.

Faithful to its resolution, one of the first matters to be considered by Congress when it assembled for its special session on Nov. 15 was the general farm legislation. After prolonged debate in both Senate and House the farm bill was sent to conference where it rested when the final curtain was rung down. It is important to note that the bill went to conference with several mandatory provisions which administration spokesmen declared would make the entire program unworkable. Whether this means that, if passed in its present form the bill is apt to be vetoed, is a question much discussed among informed circles.

Appropriation Act.—The agricultural appropriation act has already received general comment. At this place it is only necessary to note that $440,000,000 is made available for carrying into effect the Soil-Conservation Act; $167,500,000 is appropriated for the Bureau of Public Roads; $15,000,000 for the Federal Farm Mortgage Corporation; and $1,200,000 for the Department's special research fund, etc.

ART

The Mellon Art Gallery Act provides a legislative basis for the $65,000,000 project to establish a National Art Gallery in Washington. The project involves three gifts to the Smithsonian Institution by the A. W. Mellon Educational and Charitable Trust. The gifts consist of a $10,000,000 gallery to be constructed in Washington; all of Andrew W. Mellon's paintings and sculptures, the present value of which is estimated at $50,000,000; and an endowment fund of $5,000,000 primarily for compensation of the principal officials of the gallery.

BANKING

Disaster Loan Corporation Act.—This act calls upon the Reconstruction Finance Corporation to provide $20,000,000 and the managing personnel for a Disaster Loan Corporation, the capital coming from the unexpended balance of $50,000,000 available for catastrophe relief loans under the Act of 1936. The bill passed the House and the Senate, and was approved by the President all on the same day, Feb. 11. The hurried procedure was due to the emergency flood conditions then existing in many parts of the Middlewest.

Federal Reserve Notes Act.—The purpose of this act was to extend the period during which direct obligations of the United States may be used as collateral security for Federal Reserve notes. The extension will expire on June 30, 1939.

Reconstruction Finance Corporation Act.—This act was a sample of the quick extension of emergency agencies in the early part of the session. Introduced by Senator Glass of Virginia, the measure passed the Senate Jan. 15, 1937, the House on Jan. 22, and was approved by the President on Jan. 26. Its purpose was to extend the life and powers of the RFC until June 30, 1939. The President is authorized to advise the directors of the Corporation to suspend its lending authority in cases where private capital is obtainable at fair terms and rates.

Stabilization Fund Act.—Introduced by Senator Wagner of New York at the time of the introduction of the Federal Reserve Note Act, this measure passed the Senate and the House as well on Jan. 19, 1937 and was signed by the President Jan. 23. It simply extended the time in which the President might exercise his powers relating to the stabilization fund and alteration of the weight of the dollar to June 30, 1939.

BANKRUPTCY

Municipal Debt Adjustment Act.—Approved on Aug. 16, this act amends the Bankruptcy Act by providing legislation to take the place of the Act of 1934, which had recently been held unconstitutional by the Supreme Court. The act provides a procedure by which insolvent taxing jurisdictions may effect compositions with their creditors. These compositions would be approvable only when the particular jurisdiction filed voluntary proceedings in bankruptcy accompanied by plans approved by 51 per cent of the creditors. The jurisdiction of the act terminates June 30, 1940.

Corporate Reorganization Act.—This act adds a new provision to the Bankruptcy Act providing that the court before which a reorganization plan is pending can authorize the lease or sale of property owned by the debtor corporation if the court should find that the lease or sale of the property was desirable and to the best interest of the debtor corporation and its creditors.

NATIONAL CANCER INSTITUTE ACT

The National Cancer Institute Act creates in the Public Health Serv-

ice an agency to conduct research into the causes of cancer and to coordinate the other agencies engaged in the investigation of the same problem. It authorizes an appropriation of $750,000 for a building in Washington to house the Institute and provides $700,000 a year for the conduct of research activities. In addition the act sets up a national advisory cancer council to be composed of six doctors and scientists appointed by the Surgeon General of the Public Health Service.

CIVIL SERVICE[3]

Despite, almost in defiance of, the fact that the Civil Service issue was one of the most prominent in the campaign of 1936 in which both parties vigorously pledged their support of the principles of the merit system, the record of the last session on the merit system is one of the most wretched made by any recent Congress. In the words of Professor Leonard D. White: "This record discloses a scandalous disregard of a solemn undertaking, and a complete indifference to the plain mandate of the American people."

The actual contribution of the last session to the merit system consisted of three measures. The first extended Civil Service to cover three instructors in the Coast Guard Academy, but, unfortunately, it also exempted five professors at the same institution; the second extended the Civil Service system to the employees of the newly established National Gallery of Art, but only because of the insistence of the donor, Andrew W. Mellon; while the third repealed the portion of the Economy Act of 1933 which provided that when personnel reductions proved necessary for purposes of economy that those employees whose husbands or wives were also employed in the service should be the first dismissed (going on in positive terms to prohibit discrimination against any employee by reason of his or her marital status). In view of the attitudes reflected in other respects, it is to be wondered whether this was done out of concern for good personnel administration or by reason of a desire to remove all possible restrictions upon the free operation of the patronage system.

In justice to the few friends of the merit system in the last session, it must be said that some efforts were made to secure the extension of civil service. Representative Ramspeck (D., Ga.) introduced a measure which blanketed all of the first, second and third class postmasters into the Civil Service. New appointments were to be made from a list of three certified by the Civil Service Commission. It is important to note that the appointments were to have been made by the Postmaster-General rather than by the President. Thus by classifying the positions as "inferior offices" the need for senatorial confirmation was obviated. On Jan. 28, 1937 the Ramspeck bill was passed in the House without a roll call.

Upon being sent to the Senate, the bill was referred to the Civil Service Committee. Neither the Chairman, Senator Bulow, nor the real power in the committee, Senator McKellar, was a friend of the principle of Civil Service. As might be expected, the bill slumbered peacefully in committee through the major part of the session. In the early part of August, Senator O'Mahoney inquired about it and received the following reply from Senator McKellar: "I do not see how the author of the bill could ever have expected the Senate seriously to consider such a bill." With this brief flurry the efforts to dislodge the measure subsided, and the bill remains today where it was deposited in the latter part of January, 1937. Such is the record of the session's positive accomplishments.

Much more disheartening were the efforts which were made to sabotage the merit system. During the regular session no less than 146 bills proposed the complete exemption from Civil Service of a great variety of speci-

[3] The preparation of this summary was assisted by an analysis presented by Dr. Leonard White in an address delivered in Milwaukee, Nov. 19, 1937.

fied agencies or offices. Dr. White, then a member of the Commission, records that the United States Civil Service Commission became so alarmed during the middle of the session that it called the attention of the President to the situation. Immediately thereafter the President addressed letters to both the Vice-President and the Speaker saying: "Please let me urge upon Congress the desirability of placing all but policy-forming positions under the merit system." While there was every evidence that the President was in earnest in his suggestion, Congress either thought otherwise or simply did not think about it at all, for the number of such proposed exemptions continued and for a time appeared to be on the increase. When Aug. 21 arrived, 21 of these proposals had become law.

In addition to the damage thus inflicted upon the merit system, Congress dealt it another blow through the invention of the none too subtle practice of requiring senatorial confirmation for all appointments to positions paying over a specified maximum salary. This subterfuge was most prominently employed in the selection of the experts and attorneys of the Social Securities Board, paid over $5,000 per year. Again in the case of the appointees under the Black-Connery Wages and Hours Bills as passed by the Senate, all of those whose salaries are in excess of $4,000 per year must be confirmed by the Senate. It is significant, if tragic, that this was decided by a vote of 73 (56D, 15R, 2F.L.) to 11 (10D, 1P). Bad as the Democratic record on this general problem has been, so far as this particular issue is concerned, the Republican showing is worse.

The nadir "in this scandalous record" is probably to be found in the Housing Act, which exempts from Civil Service all officers, attorneys and experts, and all positions paying over $1,980 per year.

CIVILIAN CONSERVATION CORPS

On April 21 Representative Connery introduced the CCC Act of 1937 providing for the extension of the CCC until June 30, 1940. An Administration measure establishing the Corps as a permanent agency was accepted by the Senate but rejected by the House. The three-year extension was a compromise arrived at in conference. The original two-year extension provision passed the House by a vote of 389 to 7 while the Senate rejected the same provision by a vote of 42 to 26.

FLOOD CONTROL

This act amends the Flood Control Act of 1936 which enumerates authorized flood control projects and authorizes the Chief of Engineers on further investigation relative to the Ohio River project to make necessary revisions or modifications on the reservoir system for the protection of Pittsburgh.

The Whittington Act calls for the construction of levees, floodwalls and drainage structures for the protection of Ohio River cities, the projects to be selected by the Chief of Engineers with the approval of the Secretary of War, at a cost not to exceed $24,877,000 for construction. The bill was passed in the House on July 19, in the Senate on Aug. 20, and was approved by the President on Aug. 28.

GOVERNMENT REORGANIZATION [4]

The spectacular Supreme Court contest completely distracted Congressional attention from the plan of wholesale reorganization of the executive branch proposed by the President in a special message to Congress on Jan. 12, 1937. This proposal included five major points:

1. The increase of the number of executive departments to 12 by the addition of a Department of Social Welfare and a Department of Public Works. The grant to the President of continuing power to separate and consolidate

[4] In the preparation of this section the writers have drawn upon the excellent summary of the legislative history of this phase of the President's program written by Dr. Joseph P. Harris, *American Political Science Review*, October, 1937.

all agencies, commissions, corporations and boards under these departments.

2. The expansion of the White House secretariat to include six new executive assistants.
3. The elimination of the office of Comptroller General and the creation of an "auditor generalship," responsible to Congress only for a post-audit of financial transactions; existing pre-audit functions to be transferred to the Treasury and the judicial functions now exercised by the Comptroller General to be made subject to review by the Attorney-General.
4. The strengthening of the Budget Bureau and the consolidation in the Natural Resources Board of the complete responsibility for national planning.
5. The "upward, outward and downward" extension of the merit system to include all but distinctly policy forming positions; the elimination of the present Civil Service Commission and the substitution therefor of a single personnel administrator responsible directly to the President though advised by a part-time citizens' advisory committee. In order to remove the most serious financial "decentives" in the service pay, increases were recommended for practically all positions from the top to the bottom of the service.

The President's suggestions embody most of the major recommendations of his Committee on Administrative Management whose comprehensive report had been submitted to him late in 1936. This committee is commonly referred to in Washington as the Brownlow Committee.

On Jan. 14, 1937 the House passed a resolution creating a Joint Committee on Government Organization composed of nine members from each of the two chambers. The Senate passed the same resolution on Jan. 29 and it was approved by the President Feb. 3. This Joint Committee held hearings in executive sessions during February, March and April. (Hearings before the Joint Committee on Government Organization, 75th Congress, 1st session.) The members of the President's Committee on Administrative Management appeared in behalf of the President's program while several members of the Brooking Institution staff testified in regard to certain financial aspects of the program in which the conceptions of their organization differed from those of the President's Committee.

The next step in the program's legislative history came with the introduction on June 23 by the late Senator Robinson of an omnibus reorganization bill which carried most of the President's recommendations. Hearings were held on this bill by the Senate Committee during the first weeks in August at the conclusion of which Senator James F. Byrnes, who succeeded Senator Robinson as chairman of the Committee, introduced a new bill and reported it out for passage during the closing days of the regular session.

Most of the criticism of the President's suggestions as embodied in the Robinson bill came from the independent regulatory commissions, forestry associations which feared removal from the Department of Agriculture of the Forestry Service, and the General Accounting Office.

The House Select Committe acting independently had appointed four subcommittees during May to consider the major features of the program. Each of these subcommittees reported out a bill covering its own particular phase of the program. Thus in all there are five bills before the two Houses embodying the principal recommendations of the Committee on Administrative Management as relayed to the Congress by the President in his message of Jan. 12, 1937.

To enumerate all of the various provisions of these five different and overlapping measures is beyond the scope of this review; those who desire the information will find it very well presented in the article by Dr. Harris previously referred to. It is not too much, however, to undertake to indicate the principal de-

partures from the report of the Committee on Administrative Management as summarized in that article. The more important of these include:

1. The absence in the Senate bill of provision for an advisory Civil Service Board.
2. No provision is made for the selection of the personnel administrator upon the basis of a competitive test.
3. The merit system is not extended upward to include the more important administrative positions.
4. No provision is made for the increase in salaries in the upper brackets.
5. The President is deprived of the power of reorganizing the independent regulatory commissions and several other independent agencies, the whole group constituting the "headless fourth branch" of the Federal Government referred to in the Committee's Report.
6. The Senate bill places the controlling power in the Bureau of the Budget instead of in the Treasury as suggested, while the House bill leaves those powers in the hands of the Comptroller General though that official is at the same time made responsible to the President rather than to the Congress as specified in the Act of 1921.
7. No provision is made for the Department of Public Works.
8. The House bill contains no provision for a National Resources Board to handle the planning responsibilities suggested for it by the Committee.

Briefly, the status of the different measures is this: the Senate bill has been reported out of committee and awaits Senate action—during the special session it waited in vain; two of the House bills have been reported out of committee and have been approved by the House and now await Senate action. The first of these measures was the bill authorizing six administrative assistants to the President. The bill was opposed by the Republican leaders and resulted in a vote along party lines of 260 (246D, 3R) to 88 (18D, 68R).

The second bill reported out was the Warren bill which re-enacted most of the reorganization provisions of the Economy Act of 1932 as amended in 1933, and in addition the bill calls for a new Department of Social Welfare. Again the debate and voting followed party lines. Final tabulation found the vote 283 (255D, 18R) to 76 (28D, 47R).

No modification of the above discussion need be made to accommodate the developments of the special session, for the whole reorganization program, in the words of *The New York Times*, "has been virtually untouched." (Dec. 20, 1937.)

HOUSING

One of the principal Administration concerns in the last session was the housing problem and the most important legislation of the session grew out of this concern. On Feb. 24, 1937 Senator Wagner introduced a slum clearance measure which finally emerged from the legislative mill on the last day of the session. In the Senate the greatest controversy came over the Byrd amendment which would have limited the cost of all projects to $4,000 per family unit. Senator Wagner vigorously asserted that the amendment would entirely vitiate the act but despite this fact the amendment passed by a narrow margin. The vote, 40 (26D, 13R, 1F.L.) to 39 (37D, 1F.L.), was a combination of sectionalism and partisanship. It will be observed that all of the Republicans voted for the amendment; it should also be noted that almost all of the Democrats voting for the amendment were from essentially rural States. In most cases the division within the Democratic party on this issue was between liberals and conservatives—blocs already commented upon. The House, on the other hand, fixed the limit at $5,000 and the conferees agreed upon a $4,000 limit for cities under 500,000 and $5,000 for cities of larger size.

There were but two votes recorded on this measure in the House. The

first came with a motion to recommit the bill with instructions to place the new agency therein created under the merit system. As in the case with most merit system votes, the balloting was largely upon a party basis and the motion lost 140 (55D, 73R, 13F.L.) to 221 (219D, 1R, 1P). The second roll call came with the passage of the bill 275 (231D, 24R) to 86 (38D, 48R).

In conference committee it was decided that all employees receiving salaries of less than $1,980 a year should be included in the Civil Service, those between that figure and $7,500 should be subject to administrative appointment while those receiving more than $7,500 should be confirmed by the Senate.

As finally passed the act sets up a United States Housing Authority in the Interior Department under a $10,000 a year administrator appointed by the President. The Authority may issue $500,000,000 of government-guaranteed securities over a three-year period to finance sixty-year loans to public housing agencies. The loans may not exceed 90 per cent of the cost of projects undertaken. In addition the bill provides for annual subsidies, to which local communities must contribute 20 per cent, to assist in maintaining low rentals, or outright grants of capital and relief labor, which may aggregate 40 per cent of construction costs and to which communities must add another 20 per cent. Local projects must include demolition, and repair of slum dwellings equivalent to the new units financed by the act. The bill was approved by the President Sept. 1, 1937.

IMMIGRATION

The first of the Dickstein acts amends the present Immigration Act in that portion which allows repatriation of aliens about to become public charges within three years after date of entry by permitting repatriation at any time. The alien thus automatically becomes ineligible for readmission except with the approval of the Secretary of State and the Secretary of Labor. The second of the Dickstein acts provides for deportation of aliens securing entry on the basis of non-quota or preference-quota status secured through fraudulent marriage to citizens of the United States.

INDUSTRIAL RELATIONS

Apprentices' Welfare Act.—This act makes it possible for the Secretary of Labor to formulate and promote labor standards necessary to promote and safeguard apprentice welfare.

Unemployment Census.—On or before April 1, 1938 the President is to have made an investigation into the amount and geographical distribution of unemployment and such other details as may be thought necessary by a committee consisting of the Secretaries of Labor and Commerce, WPA Administrator, and several others.

LABOR STANDARDS BILL

In the final speech of his campaign in 1936 President Roosevelt said: "Of course we will continue to seek to improve working conditions for the workers of America—to reduce hours overlong, to increase wages that spell starvation and end the labor of children, to wipe out sweatshops. . . . For all of these we have only just begun to fight." In pursuance of this promise the President called for such legislation in a special message to Congress on May 24.

On the same day a very broad hours and wages bill was introduced by Representative Connery, chairman of the House Labor Committee, and Senator Black, chairman of the Senate Committee on Education and Labor. As originally drafted this bill contemplated the fixing of mandatory wages and hours standards for all enterprises engaged in manufacturing, mining, handling or transporting goods that enter into interstate commerce. In addition it sought to set up a Federal Labor Standards Board with broad discretionary powers to make exceptions to the provisions of the act and to fix separate wage rates for particular occupations and industries. It prohibited the movement in interstate commerce of goods produced

by child labor (under 16) and finally, it prohibited the use of strike breakers during labor controversies as well as the employment of persons engaged in labor espionage.

The provision relating to the Board's power to set wage levels above the basic rates where it felt such action necessary by reason of the absence of adequate collective bargaining agencies quickly drew fire from both of the major labor groups and was as quickly deleted by the Senate Committee. Also stricken from the bill at that time was the prohibition against the use of strike breakers during industrial disputes and the use of industrial spies. When it was finally agreed upon in Committee the Labor Standards Board was empowered to establish minimum wages but no minimum could be more than 40 cents per hour; it could also establish maximum hours of work but no maximum could be less than 40 hours. The intention was that all adjustments above these levels were matters to be settled by collective bargaining.

When the bill reached the floor of the Senate it was bitterly debated with far more regard for basic economic philosophy than for party affiliation. It was amended to exempt large groups of seasonal, agricultural and other workers. By far the most important change, however, was that which substituted a plan of child-labor control for the prohibition contained in the Administration's proposal. The substitution would secure the desired end by prohibiting the movement of child-labor-made goods into a State which prohibited the sale of such merchandise within its borders. In effect the state statutes thus became Federal statutes. In States not prohibiting the sale of such commodities child-labor products might be introduced provided that they were labeled to show that fact.

In this as in the Supreme Court plan contest the objection came principally from the Democratic party itself. Thus the motion to recommit the bill, for example, was made by Senator Connally, a Texas Democrat. The Southerners in both Houses feared that the Board would use its extensive powers to set up uniform wage and hour scales which would wipe out the differential which the South has thus far been able to maintain. More votes were cast against the bill by Democrats than by Republicans and two-thirds of those dissenting Democratic votes were from south of the Mason-Dixon line. Despite vitiating amendments and Democratic dissension the bill passed with a vote of 56 (51D, 2R, 2F.L., 1P) to 28 (15D, 13R).

Four days after its passage in the Senate (July 31) the bill was approved by the House Labor Committee though with a series of amendments proposed by President Green of the American Federation of Labor which in their author's own words "reduce the specific limits of the board's jurisdiction over wages and hours to slight significance and governmental control of industry to a minimum." However, the bill soon encountered considerable opposition in the House Rules Committee where it was reported to have but four supporters in a committee of 14. The Administration leaders dared not force the suspension of the rules for the consideration of the measure since it could not be sure of an adequate majority. The regular session closed with the measure still withheld by the Rules Committee. The bill finally reached the floor of the House in the special session only to meet serious opposition and to be re-referred to the originating committee.

In the meantime the Senate, despairing of House action on the whole wages and hours program, passed the Child-labor bill which had been included in the Wages and Hours bill by amendment on the floor of the Senate. Thus far the House has taken no action on this proposal.

INTERSTATE COMPACTS

New England Minimum Wage Compact Act.—Following the trend toward the increased use of the interstate compact as an instrumentality for coping with interstate problems Congress gave its consent to its use as a means of establishing uniform

standards for conditions of employment. Thus far the compact has been ratified by but three state legislatures though it has been signed by the Governors of seven States.

Oil Compact Act.—This is but an extension to Sept. 1, 1939 of a compact executed in 1935 to conserve gas and oil. The original compact had been ratified by New Mexico, Kansas, Oklahoma, Illinois, Colorado and Texas.

MERCHANT MARINE

The Bland Seamen Discharge Book Act provides that every seaman upon a merchant vessel of the United States of 100 gross tons or above, excepting vessels operating exclusively within the navigable waters of the United States, shall be furnished, at the option of the seaman, with a continuous discharge book or with a certificate of identification. Possession of either the discharge book or the certificate of identification is made a necessary condition precedent to employment on vessels covered by the act. A permanent record of books and certificates is to be kept in Washington but is not to be opened to the public. The act was introduced by Representative Bland of Virginia, was passed by the House March 11, by the Senate March 19, and approved by the President March 24.

NATIONAL DEFENSE

Helium.—The acts of 1925 and 1927 were amended to permit the Federal Government to create a government monopoly in the manufacture and sale of helium and to provide for the acquisition by purchase of private plants engaged in helium manufacture at the time the measure becomes law.

Naval Appropriations.—While appropriations have been reviewed elsewhere in this summary it might be well at this point to indicate that the naval appropriations call for the construction of two battleships, eight destroyers and four submarines.

Army Appropriations.—There is appropriated for the military establishment a total of $415,263,154 which is in addition to the $194,536,063 which was appropriated for the civil functions of the War Department.

NATURAL RESOURCES

Guffey-Vinson Bituminous Coal Act.—It will be remembered that a Bituminous Coal Conservation Act was passed in 1935 but was subsequently declared unconstitutional by the Supreme Court by reason of its labor provisions. This measure was re-enacted in substantially its original form by the Act of 1937 with the exception of the deletion of the objectionable labor provisions.

The act creates a Federal Bituminous Coal Commission composed of seven members with four-year terms and salaries of $10,000 a year. The Commission is set up in the Department of the Interior and includes two representatives for the coal miners and an equal representation for the owners. The act gives broad powers to the Commission with respect to such problems as price-fixing, marketing, and regulation of business practices in the industry. While one of the principal purposes of the bill was to stabilize the industry's price structure so as to permit the payment of higher wages to miners, the only labor provisions were those asserting the right of employees to organize and bargain collectively.

Minimum coal prices are to be fixed by the Commission upon the proposal of the district boards. It is significant that a punitive tax of 19.5 per cent of the sale price of the coal is levied upon those producers who do not become code members. The act is, of course, designed only for application to those concerns engaged in the interstate sale and distribution of bituminous coal. The act is to remain in force for four years.

The measure passed the House on March 3 without a record vote. It encountered little serious opposition in the Senate being passed on April 5 by a vote of 58 (54D, 2R, 1F.L. 1I) to 15 (8D, 7R). The President signed the bill on April 26.

"Hot Oil" Extension Act.—The Connally "Hot Oil" Act of Feb. 22, 1935 prohibited shipments in interstate commerce of oil produced in

excess of quotas fixed by state laws. The act approved by the President on June 14, 1937 extends the earlier act until June 30, 1939.

Bonneville Dam Act.—The Bonneville project was proposed by Representative Mansfield of Texas; it passed the House July 26, the Senate Aug. 9, and was approved by the President Aug. 20. This is essentially a provisional measure pending the establishment of a Columbia Valley Authority. It provides for the operation of the $75,000,000 hydro-electric project located at Bonneville. The act provides for the appointment of an administrator by the Secretary of the Interior whose duty it shall be to sell the power generated and to specify the rates which shall be charged for such power, subject to the approval of the Federal Power Commission. The War Department is given the power of maintaining the project, and of controlling the navigation and flood-control features of the program and the generation of power and its delivery to a central switchboard.

Failure of Regional Development Measures.—On June 3 the President sent a special message to Congress calling for one of the most sweeping legislative programs requested during the last session. The plan as submitted envisaged the creation of seven regional agencies to deal with problems centering in the watersheds of the seven major rivers of the United States. These problems include, the conservation of natural resources, the prevention of floods, droughts and dust storms; the generation of hydro-electric power etc. This proposal became known as the "Seven little TVA's plan."

The President's suggestions were embodied in two different bills, one introduced by Senator Norris and the other introduced by Representative Mansfield. There was one very important difference between the two bills. The latter proposed the separation of the planning authorities from the power development authorities, while the Norris measure, on the other hand, provided for their consolidation under single authorities much as is the case in the TVA (Tennessee Valley Authority). Hearings in the House disclosed the fact that there were well organized lobbies representing the public utilities, the coal industry, and several other interested groups which intended vigorously to oppose the whole program in so far as it extended beyond simple planning activities.

By the time of the adjournment of the special session in late December, 1937 the Norris plan had not even been considered in committee, while the Mansfield measure is to be entirely rewritten in committee for the purpose of taking out all provisions which might be construed as granting other than planning authority. The day before the adjournment of the special session the National Chamber of Commerce launched a broadside against the whole notion of regional planning as being unnecessary in view of the present activities of both state and Federal governments, as tending to destroy the traditional Federal-state relationship, and as forming a distinct handicap to Federal administrative processes.

NEUTRALITY

Spanish Munitions Act.—This act was approved by the President on Jan. 8, 1937; it prohibits the exportation of arms, ammunition and other implements of war from the United States to Spain during the existence of civil war in that country. It also vests in the President the power to determine when the civil war has ceased, and upon his proclamation of that fact the provision of the act shall cease to apply. The resolution passed the Senate Jan. 6 by a vote of 81 to 0 and was approved by the House on the same day by a vote of 406 to 1. The single dissenting vote was cast by Representative Bernard (F.L., Minn).

Neutrality Act of 1937.—This act was passed to continue temporary embargo legislation which had been in effect since September, 1935 and which had been extended to May 1, 1937. The report of the conference committee was accepted in both

Houses on April 29 and was signed by the President on May 1. The principal provisions of the measure were as follows: 1. Continuation of the provisions in the act of 1935 prohibiting shipments of arms, ammunition or implements of war to belligerent nations, prohibiting loans and credits to such nations; 2. The President is given authority for two years to name articles and commodities, in addition to primary contraband, which may not be carried to warring nations in American ships, and to require that title to all goods to be shipped to belligerents or fractions be transferred to the purchaser before the shipments leave American territory; 3. The arming of American merchant vessels is prohibited; 4. Prohibition of travel by American nationals on the vessels of belligerents; and 5. Contributions to belligerent factions excepting those for food, clothing or medical aid are prohibited.

The principal controversy in both Houses related to whether or not the so-called "cash and carry" provisions should be mandatory or left to the President's discretion. The Senate voted in favor of the former by a vote of 31 to 43, while the House decided in favor of the latter 377 to 12. The conference committee reported the House provision and it was subsequently accepted in the Senate, 41 to 15.

RAILROAD RETIREMENT ACT

The first Railroad Retirement Act was passed in 1934 but was invalidated by the Supreme Court. Subsequently another act was passed (1935) but this too was challenged in the courts. The President then asked the railroads to come to some agreement with their employees and draft appropriate legislation embodying the terms of the agreement. The bills thus prepared and introduced received overwhelming support in both Houses and were approved by the President on June 24. The railroads have agreed not to challenge its constitutionality.

The act provides for voluntary retirement at the age of 65 or at 60 providing that the employee has been in the service for 30 years. The pensioners are exempted from benefits under the Social Security Act of 1935 though in no case are their annuities to be less than those they would receive were they not so exempted.

The plan is to be administered by a Railroad Retirement Board of three persons, one member to be selected on the nomination of the railroads, one to be selected on the nomination of the employees and a third to be selected by the President.

RELIEF APPROPRIATIONS

There were two major relief appropriation bills passed during the session. The one made available $790,000,000 as a deficiency grant to complete the fiscal year 1937. The other appropriated $1,500,000,000 for the fiscal year 1938. The former was passed without a great deal of opposition, the latter had a less even course.

The President requested the $1,500,000,000 for relief in a special message of April 20, 1937. Various attempts were made both to increase and decrease this figure but in the end it stood in both Houses. Two amendments were offered in the Senate calling for state-sharing in the cost of WPA (Works Progress Administration) projects but these were also defeated by substantial margins. The vote on final passage in the House was 327 (274D, 41R) to 44 (11D, 33R). It was passed in the Senate without a roll call.

SOCIAL SECURITY TAX ACT

This act makes available to each State which enacted in 1937 an approved unemployment compensation law a portion of the proceeds from the Federal Employers' tax in such State for 1936. The obvious purpose here is to place all of the States complying with the unemployment insurance provisions of the Social Security Act on the same basis with respect to their unemployment insurance funds. The bill was approved by the President on Aug. 24.

TAXATION

On June 1 President Roosevelt sent a special message to Congress

calling attention to the recent development of a number of ingenious and, in some cases, illegal methods of avoiding taxation employed by a number of wealthy persons. A Joint Committee on Tax Evasions and Avoidance was appointed and its report on Aug. 5 sustained the President's charges. The Joint Committee made 47 suggestions which were embodied in the Tax Loophole Revenue Act of 1937 which thereupon passed the House by a vote of 173 to 0. There was no record vote in the Senate. Most of the provisions are too technical to be reviewed here; suffice it to say that the act was divided into six titles dealing with personal holding companies, both domestic and foreign, artificial deductions for losses from sales or exchanges of property, trusts, nonresident aliens, etc.

The Nuisance Tax Act extends for two years the so-called nuisance taxes originally imposed by the Revenue Act of 1932; they include levies on gasoline, theatre admissions, sporting goods, etc.

VETERANS INSURANCE ACT

Under the Act of June 2, 1926, five-year level-premium term insurance policies were issued to veterans. There had already been two extensions on these policies but under the terms of the 1937 act the privilege of renewing expiring policies for an additional five years is permitted. This is chiefly interesting because it was one of the two measures which were passed over the President's veto.

SPECIAL SESSION

Called in special session on Nov. 15 by the President to undertake some of the work it had left undone when it adjourned in August, Congress met for five weeks and then again adjourned with all of the President's proposals still unfinished. The session produced but five acts and these were of trifling significance. Administration leaders insisted that a considerable amount of "spade work" had been done which should expedite matters in the regular session of January, 1938. The specific subjects discussed have been taken up under our topical headings. There are, however, those—and they are not few—who believe that past inactivity but foreshadows an approaching rebellion which will dwarf those which have preceded it and out of which may come a new alignment of political forces in America.

FEDERAL ADMINISTRATIVE AGENCIES

By John A. Tillema

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REPORT OF PRESIDENT'S COMMITTEE ON ADMINISTRATIVE MANAGEMENT

The project in the Federal Administrative field which attracted the greatest amount of attention during the year 1937 was the report of the President's Committee on Administrative Management. This report was submitted by the President to the Congress with his recommendations Jan. 12, 1937. The report recommends the establishment of 12 major departments: State, Treasury, War, Justice, Post Office, Navy, Conservation, Agriculture, Commerce, Labor, Social Welfare, and Public Works. It urges that all the numerous Federal boards, commissions, corporations, and authorities be allocated to the 12 departments. Only the judicial branches of certain now independent commissions are recommended to be retained on an independent basis. It is urged that the White House Staff be augmented by aides to the President, probably not to exceed six in number, to assist the President to secure speedily at all times such information as he needs for effective administration.

The President's committee has recommended the discontinuance of the present Civil Service Commission of three members and the adoption of

a single non-political administrator. A new civil service board of seven members is recommended to serve for overlapping terms of seven years. This citizen board serving part-time and receiving reimbursement only for time and expenses is to be appointed by the President with the advice and consent of the Senate. The Committee recommended that the merit system of civil service be extended to all but the strictly policy-determining officers of the departments. The downward extension of the classified service is also recommended, so as to include the lower positions within the classified service.

In the matter of financial control and accountability, it is recommended that the Bureau of the Budget be integrated with the Treasury Department. The office of the Comptroller General and the pre-audit of expenditures is to be discontinued and in its place a General Auditing Office is to be established upon an independent basis. The powers of the Auditor General are recommended to include post-audit and investigation. The settlement of all accounts and claims is to be transferred to the Treasury. A Joint Committee on Public Accounts is urged for Congress.

As co-ordinating agencies, the Federal Business Associations are to be stimulated and revivified, and the reporting and co-ordinating National Emergency Council is to dropped. It is proposed that the postmasters be used to serve as sources of information for the general public. While it is becoming somewhat doubtful whether the major part of the report will be enacted by Congress in the near future, some of its features will in all probability be adopted by the present Administration.

ADMINISTRATIVE CHANGES

During the year 1937 an Assistant, two Advisors on Political Relations, and an Advisor on International Economic Affairs were added as aides to the Secretary of State. An Office of Fiscal and Budget Affairs was created within the Department and a Division of International Conferences erected.

The National Munitions Control Board of which the Secretary of State is chairman was continued by joint resolution of Congress approved May 1, 1937. This Board deals with the registration of manufacturers, exporters, and importers of arms, ammunitions, and implements of war; the issuance of licenses for such manufacturing, exportation, and importation and also for the exportation of tinplate scrap and of helium gas.

By Executive Order No. 7641, dated June 22, 1937, the United States Housing Corporation which is charged with the liquidation of the Government's housing undertakings incident to mobilization for the World War was transferred to the Treasury Department and placed under the Procurement Division. The Housing Corporation's activities now consist chiefly of collecting outstanding payments on houses sold to individuals on long-term installment plans. This Housing Corporation must not be confused with the United States Housing Authority established in 1937.

In connection with the administrative jurisdiction over the civil affairs of the Philippine Islands the War Department has acquired the administration of the funds of the Commonwealth Government of the Philippines deposited in the United States and matters relating to the servicing of the public debt of the Islands. The War Department is the channel of communication between the United States High Commissioner of the Philippine Islands and the Federal Departments. These functions are added to the War Department's responsibilities for the study and solution of administrative, legislative, economic, fiscal, and tariff problems affecting the Philippines.

In the Department of Agriculture the Farm Security Administration was created to succeed the Resettlement Administration, Sept. 1, 1937. The Land Utilization program of the Resettlement Administration was transferred to the Bureau of Agricultural Economics on the same date. The purposes of the Farm Security Administration are to carry out the farm tenant aid and rural rehabilita-

tion programs under the Bankhead-Jones Farm Tenant Act. It also has the duty to complete the resettlement projects begun under the Resettlement Administration.

FARM SECURITY ADMINISTRATION

Under the Bankhead-Jones Act, the Farm Security Administration is authorized to make loans to competent farm tenants, share croppers, and farm laborers to enable them to become farm owners. For the fiscal year ending June 30, 1938, an appropriation of $10,000,000 has been made available for the purpose. An appropriation of $25,000,000 is authorized for the year 1939 and $50,000,000 for each fiscal year thereafter. Loans are to be made to tenant farmers at three per cent interest for periods not extending beyond 40 years. The funds available are to be distributed among the States and Territories on the basis of the farm population and the prevalence of tenancy.

County committees of three members are to be organized in about 300 counties during the first year. These county committees are to examine applications for loans, appraise the farms which applicants propose to purchase and to recommend persons of character and experience who promise to become successful farm owners. The law requires that applicants be citizens of the United States and preference is to be given to persons who are married and have dependents and who are able to make down payments or who own livestock and farm implements necessary for successful farm cultivation.

The Farm Security Administration also assists farmers who are burdened with debts through voluntary debt adjustment committees. About 3,000 of these committees bring the farmers and their creditors together for the purpose of solving their problems so that the farmers may retain possession of their farms and the creditors may receive some payment. The members of the debt adjustment committees serve without pay and without cost either to debtors or creditors.

The Farm Security Administration has taken over 122 Resettlement projects. Thirty-eight of these have been completed and 84 are under way. These projects were designed to house about 14,000 families. Three of these projects are the Greenbelt communities near Washington, D.C., Cincinnati, O., and Milwaukee, Wis. The other projects are designed to provide homesteads with facilities for farming for families removed from worn-out lands, cut-over areas, or exhausted mining districts. No new projects are contemplated.

EMPLOYEES OF THE FEDERAL GOVERNMENT

On June 30, 1937, the date of the last available compilation, there were 841,644 positions in the entire executive branch of the Federal Government. Of this number 532,073 positions were in the classified service. The rest were unclassified.

THE RAILROAD RETIREMENT BOARD

A railroad retirement board was established under the Act of Aug. 29, 1935. The name was retained under the Railroad Retirement Act of 1937 which amended the former act to conform to the constitutional requirements found violated in the Act of 1935. The purpose of the Act of 1937 is to establish a Federal Retirement system for the payment of annuities and pensions to superannuated and disabled railroad employees. The present acts cover employees of any express company, sleeping car company, or carrier by railroad subject to the Interstate Commerce Acts. The acts include employees of railway labor organizations national in scope and organized in accordance with the Railway Labor Act, their state and national legislative committees, their insurance departments, and, under certain circumstances, their local lodges and divisions.

The new Railroad Retirement Board comprises three members—one to be nominated by the representatives of employees, one by the carriers, and one, who is chairman, is nominated by neither group. All three are to be appointed by the

President and confirmed by the Senate.

The Railroad Retirement Act of 1937 creates an account in the Treasury of the United States known as the Railroad Retirement account to which is appropriated each fiscal year an amount actuarily determined by the Board to be sufficient as a premium to provide for the payment of all annuities, pensions, and death benefits under the Railroad Retirement Acts of 1935 and 1937. Part of the premium is to be used for the payment of current liabilities and the remainder is invested in obligations of, or guaranteed by, the United States, and is to yield an interest of not less than three per cent. This investment is intended to create a reserve to cover future increases in payments.

By public resolution of Congress approved Aug. 25, 1937, the period within which the Special Mexican Claims Commission is required to complete its work was extended to the end of August, 1938, with the proviso that if the President finds the work to be completed before that time he may terminate the powers, rights, and duties by executive order. By the same resolution the jurisdiction of the Commission is defined as not including any of the claims found by the Committee provided for in the Special Claims Convention of April 24, 1934, but to be general claims except such of those claims as may be reclassified as special claims during the existence of the Commission.

DISASTER LOAN CORPORATION

This Corporation was created by Act of Congress approved Feb. 11, 1937 to provide loans made necessary by floods or other catastrophes in the years 1936 and 1937. The Corporation is managed by officers and agents appointed by the Reconstruction Finance Corporation under rules and regulations prescribed by the Board of Directors of the latter corporation. It functions through a central office in Washington, D.C. and regional offices in charge of agents. The capital stock is not to exceed $20,000,000 to be subscribed and paid by the Reconstruction Finance Corporation.

The Emergency Relief Appropriation Act of June 29, 1927 continued the Federal Emergency Relief Administration, created by Act of 1933, to June 30, 1938 and directed its liquidation by the Works Progress Administrator.

UNITED STATES HOUSING AUTHORITY

This organization was created a body corporate of perpetual duration in the Department of the Interior by Act of Congress Sept. 1, 1937. All the powers of the corporation are vested in an Administrator who is appointed by the President by and with the advice and consent of the Senate. An executive order dated Oct. 27, 1937, transferred to the Authority all housing and slum clearance projects of the Federal Emergency Administration of Public Works and all assets, contracts, records, applications, libraries, research materials, and other property, together with the unexpended balances of funds allocated to the Public Works Administration for the construction of any housing or slum clearance projects. The purpose of the Authority is to assist the States and their subdivisions to remedy unsafe and insanitary housing conditions and to relieve the acute shortage of decent, safe, and sanitary dwellings for families of low income and to alleviate present and recurring unemployment.

Loans are to be made at the going Federal rate at the time plus one-half of one per cent and are to be secured in such manner and to be repaid within such a period, not exceeding 60 years, as may be determined by the Authority. The Authority has a capital stock of $1,000,000 subscribed to by the United States. The sum of $26,000,000 was authorized to be appropriated for the fiscal year ending June 30, 1938. The Authority is permitted to issue obligations in the nature of notes, bonds, or otherwise which it may sell to obtain funds for the purposes of the Act. Such obligations may be issued in the sum not to exceed

$100,000,000 on or after Sept. 1, 1937, an additional amount not to exceed $200,000,000 on or after July 1, 1938, and another amount of not more than $200,000,000 on or after July 1, 1939.

The cost of construction, excluding the cost of land, demolition, and non-dwelling facilities of any housing project is limited to $1,000 a room or $4,000 a family dwelling unit in cities under 500,000 population. In larger cities it is limited to $1,250 per room or $5,000 per family dwelling unit.

FEDERAL POWER COMMISSION

An Act of Congress approved Aug. 20, 1937 provides that the Federal Power Commission shall appoint a representative on the advisory board for the Bonneville Dam project, approve rate schedules as provided in the Act. New schedules and modifications of power rates and charges prepared by the Administrator are to become effective upon confirmation and approval by the Commission. The Commission is required to make allocations of costs of producing and transmitting electric energy generated at Bonneville and the Administrator is required to keep accounts subject to the requirements of the Federal Power Act, the new name for the Public Utility Act of Aug. 26, 1935.

THE SUPREME COURT AND CONSTITUTIONAL LAW

By Thomas Reed Powell

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THE SUPREME COURT ALIGNMENT

In the review of the work of the United States Supreme Court for the term beginning in October, 1935 (The American Year Book, 1935, page 31) it was noted that "how the scales of the Court are tipped may be suggested by the fact that in only two cases were Justices Van Devanter, McReynolds, Sutherland and Butler together in dissent." Turning to the term of Court beginning in October, 1936 and ended in June, 1937, a strikingly different situation is met. In this term there were 11 cases in which these four Justices were together in dissent. In addition there was a chain-store tax case in which three of them dissented and Mr. Justice Van Devanter did not sit. In all but one of these cases, the decision of the majority was in favor of the exertion of governmental authority. The single exception was *Herndon* v. *Lowry,* 301 U.S. 242 (1937) which reversed a conviction obtained under the Georgia Anti-insurrection Law.

Of the ten cases in which governmental authority was sustained over the dissent of these four Justices, two involved repetitions or applications of earlier majority positions. One sanctioned regulation of the price of milk and the other the abrogation of the gold clause in private undertakings. Four cases sustained the application of the Wagner Labor Act to industrial plants and to the Associated Press. Another case reversed former decisions and sustained the constitutionality of minimum-wage laws for women. Two cases sanctioned the use of the state and the national taxing powers to provide systems of unemployment compensation. The remaining case approved of a Wisconsin statute legalizing peaceful picketing.

There were only three cases in which Justices Brandeis, Stone and Cardozo dissented together, and in all three they were joined by one of their colleagues. Mr. Chief Justice Hughes joined them in objecting to the condemnation of a special tax on railroads, the majority adducing the reason that the State had the burden of proof, which it had not met, of establishing that it was not excessively out of proportion to the expense of regulation. Mr. Justice Roberts joined them in two cases. One was on a procedural point in which the majority permitted a stock-

holder to raise the issue of the constitutionality of a tax in a suit against the corporation. In this case the dissenters on the procedural point joined with the Chief Justice and Mr. Justice Van Devanter to sustain the Federal statute providing for old age benefits. In the remaining case, the majority condemned the discrimination involved in forbidding stock, but not mutual, insurance companies to do business in the state through resident agents who are salaried employees. Justices Brandeis and Cardozo dissented together in two cases in which Mr. Justice Stone did not sit. One condemned a chain-store tax and the other an inheritance tax.

These cases in which the Court was divided do not exhaust the list of decisions of far-reaching importance. The term of Court may be significant, not only for the shifting of four Justices from dominance to dissent, but also for an increase in unanimity or near unanimity. No one can say with confidence to what extent the general tolerance of the Court toward legislation was due to the fact that the Court itself was so much in the limelight of public discussion; but it is difficult to escape the impression that such tolerance was in fact much more exemplified during the past term than during the terms immediately preceding. Though there was only one instance of direct overruling of prior decisions, there were numerous cases in which the minority insisted that the newly-made law was inconsistent with what had gone before. If we can accept their view of the matter, there has been a much greater change of direction than the new majority explicitly avow. It is the judicial fashion to profess continuity even when outsiders do not so readily find it. This much at least is true. There is now in the books a greater variety of precedents from which contending counsel may each seek comfort than in the few years immediately preceding.

Many of the important constitutional decisions contained several points raised by different constitutional clauses. For the student of doctrine, the cases might appropriately be split up into their several doctrinal issues. For the general student of government and the observer of the Supreme Court as one of the three departments of government, it seems preferable to present the cases as integral units. It is to be noted that Justices who dissent on one constitutional issue are likely to dissent on others. This warrants the inference that it is the controversy rather than the particular constitutional clause that should be put in the foreground.

THE AMENDED RAILWAY LABOR ACT

In *Virginia Ry.* v. *Federation,* 300 U.S. 515 (1937), the Court was unanimous in ordering an interstate carrier to "treat with" employees not themselves engaged in transportation and to exert every reasonable effort to make and maintain agreements with regard to rates of pay and working conditions. The company did not contest that part of the decree of the lower court which enjoined "any interference by it with the free choice of representatives by its employees, and the fostering, in the circumstances of this case, of the company union." Mr. Justice Stone observed that such an objection would not be open to it, under prior decisions. The contested issues in the case were whether the statute could be applied to "back-shop" employees, whether the company could be restrained from making collective agreements with other than the duly chosen representatives of the employees, and what was the extent of the obligation of the company to "treat with" its employees.

On this latter question, as a matter of statutory interpretation, Mr. Justice Stone declared:

> The statute does not undertake to compel agreement between the employer and employees, but it does command those preliminary steps without which no agreement can be reached. It at least requires the employer to meet and confer with the authorized representative of its employees, to listen to their

> complaints, to make reasonable effort to compose differences—in short, to enter into a negotiation for the settlement of labor disputes . . .

This obligation to treat only with accredited representatives involves the negative obligation to treat with no other for collective bargaining. Individual contracts, however, may be made with individual employees. On the question whether equity can order the company to "treat with" representatives when such negotiations may come to naught, the answer is in the affirmative. Negotiations, even though they fail, may be the preliminary to mediation and may influence final settlement of disputes.

On the question whether compulsion not to interfere with the free choice of representatives was not inconsistent with prior decisions condemning statutes forbidding discharge by reason of union membership and statutes forbidding requirement of promises not to become or remain a member of a union, Mr. Justice Stone merely repeated the formula of an intervening opinion that such compulsion does not "interfere with the normal exercise of the right of the carrier to select its employees or to discharge them." Satisfactory explanation of the distinction between the normal right to discharge employees because of union membership and the nonexistent right so to discharge them in order to discourage free choice of representatives to treat for collective bargains, even when no strike is involved, is still awaited.

The commerce question in the case was whether the Federal authority extends to "back-shop" employees. This was answered in the affirmative. It was said to be immaterial that the carrier might have had this repair work done by independent contractors since in fact it did not do so. A strike among the repairmen would not only seriously cripple work essential to the continuity of transportation but might very well extend to employees directly engaged in transportation. It is not significant that the repairmen might not come within the Employers' Liability Act, since the scope of "the commerce power is as much dependent upon the type of regulation as its subject matter."

THE WAGNER ACT CASES

Four cases arising under the Wagner Act were decided in favor of the Government. All involved interference with union organization by discharge of employees for union activities. The decrees required reinstatement of such employees with full pay for lost time. Like the amended Railway Labor Act, the statute does not compel the making of collective agreements, but it forbids the making of such agreements with others than the duly chosen representatives of the employees. Individual employees are left free to present grievances and to make individual contracts. The four cases raised issues under the commerce and the due process clauses, and one involved the guarantee of the First Amendment against abridgment of freedom of the press.

THE COMMERCE QUESTION

In view of the application of the statute to a clothing manufacturer in *Labor Board* v. *Clothing Co.,* 301 U.S. 58 (1937), it is not necessary to consider the arguments made by the Chief Justice for its application to a large integrated steel concern engaged also in transportation in *Labor Board* v. *Jones & Laughlin,* 301 U.S. 1 (1937), and to a manufacturer of trailers with sales agencies in numerous States in *Labor Board* v. *Fruehauf Co.,* 301 U.S. 49 (1937). The clothing concern had its sole factory in Richmond, Va. Nearly all of its raw materials were introduced from other States. Over 80 per cent of its product was sent to other States. Its sales approached $2,000,000 in 1935. The majority opinion cites these facts and quotes some more general findings of the Labor Board and then contents itself with concluding: "The findings of the Board both as to the nature of respondent's business and the circumstances of the discharge of its employees are supported by the evidence."

The minority opinion of Mr. Justice

McReynolds gives the further facts that the concern "produces less than one-half of one per cent of the men's clothing produced in the United States and employs 800 of the 150,000 workmen engaged therein." It adds that if the plant were "closed today, the ultimate effect on commerce in clothing obviously would be negligible." The case involves no element of monopoly or attempt to restrain trade, no strike or threatened strike. If Congress may extend its power to such a situation, it may "extend it into almost every field of human activity."

In the majority opinion in the Jones & Laughlin Case it is said that the Schechter Case (see THE AMERICAN YEAR BOOK, 1935, p. 47) and the Carter Case (*ibid.*, 1936, p. 43) are not controlling, but this is supported only by a brief statement of what the Court concluded in those cases. It is, however, emphasized earlier that the Wagner Act seeks to forestall restraints on commerce, and the nature of the statute is adduced in justification for the permissible breadth of its constitutional scope. With reference to the large integrated steel concern there involved, the Chief Justice says:

> The congressional authority to protect interstate commerce from burdens and obstructions is not limited to transactions which can be deemed to be an essential part of a "flow" of interstate or foreign commerce. Burdens and obstructions may be due to injurious action springing from other sources. The fundamental principle is that the power to regulate commerce is the power to enact "all appropriate legislation" for "its protection and advancement" . . . to adopt measures "to promote its growth and insure its safety" . . . "to foster, protect, control and restrain." . . . That power is plenary and may be exerted to protect interstate commerce "no matter what the source of the dangers which threaten it." . . . Although activities may be intrastate in character when separately considered, if they have such a close and substantial relation to interstate commerce that their control is essential or appropriate to protect that commerce from burdens and obstructions, Congress cannot be denied the power to exercise that control. . . .
>
> That intrastate activities, by reason of close and intimate relation to interstate commerce, may fall within federal control is demonstrated in the case of carriers who are engaged in both interstate and intrastate transportation. There federal control has been found essential to secure the freedom of interstate traffic from interference or unjust discrimination and to promote the efficiency of the interstate service. . . .
>
> The close and intimate effect which brings the subject within the reach of federal power may be due to activities in relation to productive industry although the industry when separately viewed is local. This has been abundantly illustrated in the application of the federal Anti-Trust Act. . . .
>
> It is thus apparent that the fact that the employees here concerned were engaged in production is not determinative. The question remains as to the effect upon interstate commerce of the labor practice involved. . . .
>
> . . . We are asked to shut our eyes to the plainest facts of our national life and to deal with the question of direct and indirect effects in an intellectual vacuum. Because there may be but indirect and remote effects upon interstate commerce in connection with a host of local enterprises throughout the country, it does not follow that other industrial activities do not have such a close and intimate relation to interstate commerce as to make the presence of industrial strife a matter of the most urgent national concern. When industries organize themselves on a national scale, making their relation to interstate commerce the dominant factor in their activities, how can it be maintained that their industrial labor relations constitute

a forbidden field into which Congress may not enter when it is necessary to protect interstate commerce from the paralyzing consequences of industrial war? We have often said that interstate commerce itself is a practical conception. It is equally true that interferences with that commerce must be appraised by a judgment that does not ignore actual experience.

Experience has abundantly demonstrated that the recognition of the right of employees to self-organization and to have representatives of their own choosing for the purpose of collective bargaining is often an essential condition of industrial peace. Refusal to confer and negotiate has been one of the most prolific causes of strife. This is such an outstanding fact in the history of labor disturbances that it is a proper subject of judicial notice and requires no citation of instances. . . . But with respect to the appropriateness of the recognition of self-organization and representation in the promotion of peace, the question is not essentially different in the case of employees in industries of such a character that interstate commerce is put in jeopardy from the case of employees of transportation companies. And of what avail is it to protect the facility of transportation, if interstate commerce is throttled with respect to the commodities to be transported!

These questions have frequently engaged the attention of Congress and have been the subject of many inquiries. The steel industry is one of the great basic industries of the United States, with ramifying activities affecting interstate commerce at every point. . . . The fact that there appears to have been no major disturbance in that industry in the more recent period did not dispose of the possibilities of future and like dangers to interstate commerce which Congress was entitled to foresee and to exercise its protective power to forestall. It is not necessary again to detail the facts as to respondent's enterprise. Instead of being beyond the pale, we think that it presents in a most striking way the close and intimate relation which a manufacturing industry may have to interstate commerce and we have no doubt that Congress had constitutional authority to safeguard the right of respondent's employees to self-organization and freedom in the choice of representatives for collective bargaining.

Obviously many of these observations are less applicable to the plants manufacturing trailers and clothing, but nothing is added with respect to those concerns except that the findings of the Labor Board are supported by evidence. The minority opinion confines its detailed discussion to the case of the clothing company, but says that, so far as essential principles are concerned, the manufacturing activities of the Steel Company, "while large, do not differ materially from those of the other respondents and very many small producers and distributors." On the relation between commerce and the end sought by the statute, it says:

> There is no ground on which reasonably to hold that refusal by a manufacturer, whose raw materials come from states other than that of his factory and whose products are regularly carried to other states, to bargain collectively with employees in his manufacturing plant, directly affects interstate commerce. . . .
>
> It is gravely stated that experience teaches that if an employer discourages membership in "any organization of any kind" "in which employees participate, and which exists for the purpose in whole or in part of dealing with employers concerning grievances, labor disputes, wages, rates of pay, hours of employment or conditions of work," discontent may follow and this in turn may lead to a strike, and as the outcome of the strike there may be a block in the stream of interstate commerce. Therefore Congress may inhibit the discharge!

Whatever effect any cause of discontent may ultimately have upon commerce is far too indirect to justify Congressional regulation. Almost anything—marriage, birth, death—may in some fashion affect commerce. . . .

Section 13 of the Labor Act provides—"Nothing in this Act shall be construed so as to interfere with or impede or diminish in any way the right to strike." And yet it is ruled that to discharge an employee in a factory because he is a member of a labor organization (any kind) may create discontent which may lead to a strike and this may cause a block in the "stream of commerce"; consequently the discharge may be inhibited. Thus the Act exempts from its ambit the very evil which counsel insist may result from discontent caused by a discharge of an association member, but permits coercion of a nonmember to join one.

The things inhibited by the Labor Act relate to the management of a manufacturing plant—something distinct from commerce and subject to the authority of the state. And this may not be abridged because of some vague possibility of distant interference with commerce.

In *Associated Press* v. *Labor Board,* 301 U.S. 103 (1937), the minority opinion of Mr. Justice Sutherland confines its discussion to the freedom of the press, but states that "we do not mean thereby to record our assent to all that has been said with regard to the other questions in the case." For the majority, Mr. Justice Roberts outlines the far-flung activities of the Associated Press and says of the editorial employee engaged in re-writing dispatches for their transmission to member newspapers that "it is obvious that strikes or labor disturbances amongst this class of employees would have as direct an effect upon the activities of petitioner as similar disturbances amongst those who operate the teletype machines or as a strike amongst the employees of telegraph lines over which petitioner's messages travel."

Washington Coach Co. v. *Labor Board,* 301 U.S. 142 (1937) without dissent applied the statute to an operator of motor buses between the District of Columbia and Virginia.

DUE PROCESS AND FREEDOM OF THE PRESS

On the due-process issue, the Chief Justice points out that the Act does not compel agreements, but that its theory is "that free opportunity for negotiation with accredited representatives of employees is likely to promote industrial peace and may bring about the adjustments and agreements which the Act itself does not compel." After referring to prior differentiations of cases condemning statutes restraining employers in choosing their employees, he continues:

> The Act does not interfere with the normal exercise of the right of the employer to select its employees or to discharge them. The employer may not, under cover of that right, intimidate or coerce its employees with respect to their self-organization and representation, and, on the other hand, the Board is not entitled to make its authority a pretext for interference with the right of discharge when that right is exercised for other reasons than such intimidation and coercion. The true purpose is the subject of investigation with full opportunity to show the facts. It would seem that when employers freely recognize the right of their employees to their own organizations and their unrestricted right of representation there will be much less occasion for controversy in respect to the free and appropriate exercise of the right of selection and discharge.
>
> The Act has been criticized as one-sided in its application; that it subjects the employer to supervision and restraint and leaves untouched the abuses for which employees may be responsible; that it fails to provide a more comprehensive plan,—with better assurances of fairness to both sides and with increased chances of success

in bringing about, if not compelling, equitable solutions of industrial disputes affecting interstate commerce. But we are dealing with the power of Congress, not with a particular policy or with the extent to which policy should go. We have frequently said that the legislative authority, exerted within its proper field, need not embrace all the evils within its reach. The Constitution does not forbid "cautious advance, step by step," in dealing with the evils which are exhibited in activities within the range of legislative power.

The minority position on due process seems to be confined to compulsion on those not common carriers. There is no registered dissent in the Motor Bus Case, and in the general dissent to the three cases dealing with manufacturers, it is mentioned that in an earlier unanimous decision the Court was "considering an Act definitely limited to common carriers engaged in interstate transportation over whose affairs Congress admittedly has wide power . . ." Mr. Justice McReynolds restates the old cases condemning statutes interfering with employers' freedom with respect to union employees, and then concludes:

> The right to contract is fundamental and includes the privilege of selecting those with whom one is willing to assume contractual relations. This right is unduly abridged by the Act now upheld. A private owner is deprived of power to manage his own property by freely selecting those to whom his manufacturing operations are to be entrusted. We think this cannot lawfully be done in circumstances like those here disclosed.

In holding that freedom of the press was not infringed by the order to restore to employment an editorial writer discharged for union activities, Mr. Justice Roberts pointed out that the Associated Press made no claim that the employee had shown bias in editing the news. It, therefore, he says, "seeks to bar all regulation by contending that regulation in a situation not presented would be invalid." Its business "is not immune from regulation because it is an agency of the press." The "regulation here in question has no relation whatever to the impartial distribution of news." The scope of the ruling on freedom of the press is indicated by the following paragraph of the opinion:

> The Act does not compel the petitioner to employ anyone; it does not require that the petitioner retain in its employ an incompetent editor or one who fails faithfully to edit the news to reflect the facts without bias or prejudice. The act permits a discharge for any reason other than union activity or agitation for collective bargaining with employees. The restoration of Watson to his former position in no sense guarantees his continuance in petitioner's employ. The petitioner is at liberty, whenever occasion may arise, to exercise its undoubted right to sever his relationship for any cause that seems to it proper save only as a punishment for, or discouragement of, such activities as the act declares permissible.

For the minority of four, Mr. Justice Sutherland emphasizes the importance of freedom of the press in language reminiscent of that of Justices Holmes and Brandeis is dissenting from decisions or opinions applying the Espionage Law and state anti-syndicalism statutes. In those cases, none of these four dissented. All concurred with the majorities with which they sat. Here, however, they insist that the most sacred of constitutional immunities has been violated and that the Associated Press has lost its freedom to secure complete impartiality in its presentation of the news to its members. The facts show that the sympathies of Watson, the employee, were strongly enlisted in support of the policies of the Newspaper Guild, "whether they clashed with the policies of petitioner or not." Continuing, the opinion declares:

> We do not question his right to

assume and maintain that attitude. But, if petitioner concluded, as it well could have done, that its policy to preserve its news service free from color, bias or distortion was likely to be subverted by Watson's retention, what power has Congress to interfere in the face of the First Amendment? . . .

. . . To hold that the press association must await a concrete instance of misinterpretation of the news before it can act is to compel it to experiment with a doubt when it regards certainty as essential.

Earlier in his opinion, Mr. Justice Sutherland points out the absolute character of the First Amendment as compared with the Fifth:

Deprivation of a liberty not embraced by the First Amendment, as for example the liberty of contract, is qualified by the phrase "without due process of law"; but those liberties enumerated in the First Amendment are guaranteed without qualification, the object and effect of which is to put them in a category apart and make them incapable of abridgment by any process of law. That this is inflexibly true of the clause in respect of religion and religious liberty cannot be doubted; and it is true of the other clauses save as they may be subject in some degree to rare and extreme exigencies such as, for example, a state of war.

With more special reference to freedom of the press, and in elaboration of the importance of resisting first steps, the dissenting opinion adds the following:

The destruction or abridgment of a free press—which constitutes one of the most dependable avenues through which information of public and governmental activities may be transmitted to the people—would be an event so evil in its consequences that the least approach toward that end should be halted at the threshold. . . .

Freedom is not a mere intellectual abstraction; and it is not merely a word to adorn an oration upon occasions of patriotic rejoicing. It is an intensely practical reality, capable of concrete enjoyment in a multitude of ways day by day. When applied to the press, the term freedom is not to be narrowly confined; and it obviously means more than publication and circulation. If freedom of the press does not include the right to adopt and pursue a policy without governmental restriction, it is a misnomer to call it freedom. And we may as well deny at once the right of the press freely to adopt a policy and pursue it, as to concede that right and deny the liberty to exercise an uncensored judgment in respect of the employment and discharge of the agents through whom the policy is to be effectuated.

In a matter of such concern, the judgment of Congress—or, still less, the judgment of an administrative censor—cannot, under the Constitution, be substituted for that of the press management in respect of the employment or discharge of employees engaged in editorial work. The good which might come to interstate commerce or the benefit which might result to a special group, however large, must give way to that higher good of all the people so plainly contemplated by the imperative requirement that "Congress shall make *no* law . . . abridging the freedom . . . of the press." . . .

Do the people of this land—in the providence of God, favored, as they sometimes boast, above all others in the plentitude of their liberties—desire to preserve those so carefully protected by the First Amendment: liberty of religious worship, freedom of speech and of the press, and the right as freemen peaceably to assemble and petition their government for a redress of grievances? If so, let them withstand all *beginnings* of encroachment. For the saddest epitaph which can be carved in memory of a vanished liberty is that it was lost because its possessors failed to stretch forth a saving hand while yet there was time.

PICKETING AND UNION RULES

The issue in *Senn* v. *Tile Layers Union,* 301 U.S. 468 (1937), arose under a Wisconsin statute which legalized peaceful picketing and forbade the issue of injunctions against it. There was not much disagreement that the statute itself was constitutional as applied to the type of picketing actually in issue, provided the end toward which the picketing was directed was lawful. The dissent complained that it was a misrepresentation to put the word "unfair" on the banners carried, without explaining in more detail the acts of the employer which provoked the charge; but the majority pointed out that the employer did not ask that a fuller statement be carried on the banners, provided it was lawful to picket for the particular purpose in the case. There were never more than four pickets, and there was no intimidation of customers or employees. So the issue between the contending parties and the contending members of the Court narrowed itself to the constitutionality of applying the statute to deny relief when the purpose of the picketing was to prevail upon the employer to comply with the particular union rules underlying the conflict.

The employer was ready to unionize his business and follow union rules as to wages and hours and working conditions, provided the union would eliminate the special requirement which forbade the employer to do manual work in fulfilling his contracts. Mr. Senn had a small tile-laying business at which he worked himself with a few occasional helpers. "In 1935 he had about 45 jobs. His net income was $1,500 of which $750 was attributed to his own labor." Under union rules, he must discontinue working on his own contracts, and he could not work for others because he had not served the required season as an apprentice. Therefore, said the minority, "the state statute, construed to make lawful the employment of the means here shown to deprive plaintiff of his right to work or to make lawful the picketing carried on in this case, is repugnant to the due process and equal protection clauses of the Fourteenth Amendment."

The deprivation attempted was confined to the opportunity to work with union employees or as a union employee. It was not so broad as that asserted by the dissent. This is recognized earlier in the dissenting opinion where Mr. Justice Butler points to an absence of interest on the part of the union in the work of Mr. Senn. On this aspect of the situation, he says:

> The principles governing competition between rival individuals seeking contracts or opportunity to work as journeymen cannot reasonably be applied in this case. Neither the union nor its members take tile laying contracts. Their interests are confined to employment of helpers and layers, their wages, hours of service, etc. The contest is not between unionized and other contractors or between one employer and another. The immediate issue is between the unions and plaintiff in respect of his right to work in the performance of his own jobs. If as to that they shall succeed, then will come the enforcement of their rules which make him ineligible to work as a journeyman. It cannot be said that, if he should be prevented from laboring as helper or layer, the work for union men to do would be increased. The unions exclude their members from jobs taken by non-union employers. About half the tile contractors are not unionized. More than 60 per cent of the tile layers are non-union men. The value of plaintiff's labor as helper and tile layer is very small—about $750 per year. Between union members and plaintiff there is no immediate or direct competition. If under existing circumstances there ever can be any, it must come about through a chain of unpredictable events making its occurrence a mere matter of speculation. The interest of the unions in the manual labor done by plaintiff is so remote, in-

direct and minute that they have no standing as competitors.

Much of the majority opinion is concerned with the propriety of the picketing, independently considered, which was hardly at issue in the case. Mr. Justice Brandeis then says that "the end sought by the unions is not unconstitutional," that "there was no effort to induce Senn to do an unlawful thing," and that "the unions acted, and had the right to act as they did, to protect the interests of their members against the harmful effect upon them of Senn's action." In elaboration, he concludes:

> The laws of Wisconsin, as declared by its highest court, permit unions to endeavor to induce an employer, when unionizing his shop, to agree to refrain from working in his business with his own hands—so to endeavor although none of his employees is a member of a union. Whether it was wise for the State to permit the unions to do so is a question of its public policy—not our concern. The Fourteenth Amendment does not prohibit it.
>
> There is nothing in the Federal Constitution which forbids unions from competing with non-union concerns for customers by means of picketing as freely as one merchant competes with another by means of advertisements in the press, by circulars, or by his window display. Each member of the unions, as well as Senn, has the right to strive to earn his living. Senn seeks to do so through exercise of his individual skill and planning. The union members seek to do so through combination. Earning a living is dependent upon securing work; and securing work is dependent upon public favor. To win the patronage of the public each may strive by legal means. Exercising its police power, Wisconsin has declared that in a labor dispute peaceful picketing and truthful publicity are means legal for unions. It is true that disclosure of the facts of the labor dispute may be annoying to Senn even if the method and means employed in giving the publicity are inherently unobjectionable. But such annoyance, like that often suffered from publicity in other connections, is not an invasion of the liberty guaranteed by the Constitution. . . . It is true, also, that disclosure of the facts may prevent Senn from securing jobs which he hoped to get. But a hoped-for job is not property guaranteed by the Constitution. And the diversion of it to a competitor is not an invasion of a constitutional right.

THE MINIMUM-WAGE ISSUE AGAIN

It will be remembered that in the preceding term the Court by a five to four vote declared the New York minimum-wage law unconstitutional (see THE AMERICAN YEAR BOOK, 1936, p. 50). Though the majority opinion indicated firm approval of an earlier Supreme Court decision condemning minimum-wage laws for women, it insisted that under the pleadings this earlier case must be accepted as the basis of decision whether it still was a correct exposition of the Fourteenth Amendment or not. In a petition for rehearing, it was strongly urged that the earlier case had been distinctly called in question by the petition for certiorari, but on Oct. 12, 1936, in *Morehead* v. *Tipaldo,* 299 U.S. 619 (1926), without opinion, the petition for a rehearing was denied.

Meanwhile there was on its way to the Supreme Court a decision of the Supreme Court of the State of Washington, rendered on April 12, (1936), which sustained as constitutional a Washington minimum-wage statute, enacted in 1913, and continuously enforced ever since, notwithstanding Supreme Court negatives. This cause was argued in the Supreme Court Dec. 16–17, 1936, and a decision sustaining the statute was handed down March 29, 1937. The standard of wages involved was that dictated by the cost of decent subsistence.

Mr. Justice Roberts, who was with the majority in condemning the New York statute, was also with the majority in *West Coast Hotel Co.* v. *Parrish,* 300 U.S. 379 (1937), in sustaining the Washington statute. The

majority opinion was delivered by Mr. Chief Justice Hughes who declared explicitly that the contrary earlier decisions were overruled. He quotes at length from dissenting opinions in the earlier leading case and declares that the principles expressed therein are sound, and that intervening decisions on price-fixing have exemplified and reinforced them. After pointing out that liberty of contract is not unqualified, and enumerating instances of its constitutional curtailment, he deals with the particular issue as follows:

> With full recognition of the earnestness and vigor which characterize the prevailing opinion in the *Adkins* case, we find it impossible to reconcile that ruling with these well-considered declarations. What can be closer to the public interest than the health of women and their protection from unscrupulous and overreaching employers? And if the protection of women is a legitimate end of the exercise of state power, how can it be said that the requirement of the payment of a minimum wage fairly fixed in order to meet the very necessities of existence is not an admissible means to that end? The legislature of the State was clearly entitled to consider the situation of women in employment, the fact that they are in the class receiving the least pay, that their bargaining power is relatively weak, and that they are the ready victims of those who would take advantage of their necessitous circumstances. The legislature was entitled to adopt measures to reduce the evils of the "sweating system," the exploiting of workers at wages so low as to be insufficient to meet the bare cost of living, thus making their very helplessness the occasion of a most injurious competition. The legislature had the right to consider that its minimum wage requirements would be an important aid in carrying out its policy of protection. The adoption of similar requirements by many States evidences a deep-seated conviction both as to the presence of the evil and as to the means adapted to check it. Legislative response to that conviction cannot be regarded as arbitrary or capricious, and that is all we have to decide. Even if the wisdom of the policy be regarded as debatable and its effects uncertain, still the legislature is entitled to its judgment.
>
> There is an additional and compelling consideration which recent economic experience has brought into a strong light. The exploitation of a class of workers who are in an unequal position with respect to bargaining power and are thus relatively defenceless against the denial of a living wage is not only detrimental to their health and well-being but casts a direct burden for their support upon the community. What these workers lose in wages the taxpayers are called upon to pay. The bare cost of living must be met. We may take judicial notice of the unparalleled demands for relief which arose during the recent period of depression and still continue to an alarming extent despite the degree of economic recovery which has been achieved. . . . The community is not bound to provide what is in effect a subsidy for unconscionable employers. The community may direct its law-making power to correct the abuse which springs from their selfish disregard of the public interest.

The minority opinion of Mr. Justice Sutherland, in so far as it deals with the specific issue raised by minimum-wage laws, is largely a repetition of the views that had prevailed in the earlier cases. He, however, adds more explicitly that it is a denial of equal protection of the laws to prescribe minimum wages for women when wages for men are not so prescribed. On this, he elaborates as follows:

> An appeal to the principle that the legislature is free to recognize degrees of harm and confine its restrictions accordingly, is but to beg the question, which is—since the contractual rights of men and women are the same, does the leg-

islation here involved, by restricting only the rights of women to make contracts as to wages, create an arbitrary discrimination? We think it does. Difference of sex affords no reasonable ground for making a restriction applicable to the wage contracts of all working women from which like contracts of all working men are left free. Certainly a suggestion that the bargaining ability of the average woman is not equal to that of the average man would lack substance. The ability to make a fair bargain, as everyone knows, does not depend upon sex.

If, in the light of the facts, the state legislation without reason or for reasons of more expediency, excluded men from the provisions of the legislation, the power was exercised arbitrarily. On the other hand, if such legislation in respect of men was properly omitted on the ground that it would be unconstitutional, the same conclusion of unconstitutionality is inescapable in respect of similar legislative restraint in the case of women, . . .

In the majority opinion, the Chief Justice had recited some of the elements of the special situation of women as bargainers for wages, and he concludes by the following reference to the charge of unconstitutional discrimination:

> The argument that the legislation in question constitutes an arbitrary discrimination, because it does not extend to men, is unavailing. This Court has frequently held that the legislative authority, acting within its proper field, is not bound to extend its regulation to all cases which it might possibly reach. The legislature "is free to recognize degrees of harm and it may confine its restrictions to those classes of cases where the need is deemed to be clearest." If "the law presumably hits the evil where it is most felt, it is not to be overthrown because there are other instances to which it might have been applied." There is no "doctrinaire requirement" that the legislation should be couched in all embracing terms. . . . This familiar principle has repeatedly been applied to legislation which singles out women, and particular classes of women, in the exercise of the State's protective power. . . . Their relative need in the presence of the evil, no less than the existence of the evil itself, is a matter for the legislative judgment.

Before coming to the consideration of the minimum-wage issue, Mr. Justice Sutherland in his dissenting opinion dwelt at some length on the function of the Supreme Court in constitutional interpretation and on the criteria which should guide its exercise. In view of his subsequent retirement, these views deserve quotation at length as his intellectual testament to his successors. It may be recalled that at the preceding term, in dissenting from the decision that condemned the Agricultural Adjustment Act, Mr. Justice Stone had observed that "while unconstitutional exercise of power by the executive and legislative branches of the government is subject to judicial restraint, the only check upon our own exercise of power is our own sense of self-restraint." It is possibly in response to this suggestion that Mr. Justice Sutherland outlines his view of the judicial duty as follows:

> Under our form of government, where the written Constitution, by its own terms, is the supreme law, some agency, of necessity, must have the power to say the final word as to the validity of a statute assailed as unconstitutional. The Constitution makes it clear that the power has been intrusted to this court when the question arises in a controversy within its jurisdiction; and so long as the power remains there, its exercise cannot be avoided without betrayal of the trust.
>
> It has been pointed out many times, as in the *Adkins* case, that this judicial duty is one of gravity and delicacy; and that rational doubts must be resolved in favor of the constitutionality of the statute. But whose doubts, and by whom resolved? Undoubtedly it is the duty of a member of the court,

in the process of reaching a right conclusion, to give due weight to the opposing views of his associates; but in the end, the question which he must answer is not whether such views seem sound to those who entertain them, but whether they convince him that the statute is constitutional or engender in his mind a rational doubt upon that issue. The oath which he takes as a judge is not a composite oath, but an individual one. And in passing upon the validity of a statute, he discharges a duty imposed upon *him,* which cannot be consummated justly by an automatic acceptance of the views of others which have neither convinced, nor created a reasonable doubt in, his mind. If upon a question so important he thus surrenders his deliberate judgment, he stands forsworn. He cannot subordinate his convictions to that extent and keep faith with his oath or retain his judicial and moral independence.

The suggestion that the only check upon the exercise of the judicial power, when properly invoked, to declare a constitutional right superior to an unconstitutional statute is the judge's own faculty of self-restraint, is both ill considered and mischievous. Self-restraint belongs in the domain of will and not of judgment. The check upon the judge is that imposed by his oath of office, by the Constitution and by his own conscientious and informed convictions; and since he has the duty to make up his own mind and adjudge accordingly, it is hard to see how there could be any other restraint. This court acts as a unit. It cannot act in any other way; and the majority (whether a bare majority or a majority of all but one of its members), therefore, establishes the controlling rule as the decision of the court, binding, so long as it remains unchanged, equally upon those who disagree and upon those who subscribe to it. Otherwise, orderly administration of justice would cease. But it is the right of those in the minority to disagree, and sometimes, in matters of grave importance, their imperative duty to voice their disagreement at such length as the occasion demands—always, of course, in terms which, however forceful, do not offend the proprieties or impugn the good faith of those who think otherwise.

Mr. Justice Sutherland next considers the suggestion that the minimum-wage issue should be reconsidered because of "the economic conditions which have supervened"; and to this he answers that "the meaning of the Constitution does not change with the ebb and flow of economic events." To say that "the words of the Constitution mean today what they did not mean when written" is to "rob that instrument of the essential element which continues it in force as the people have made it until they, and not their official agents, have made it otherwise." For results that may be undesirable, Mr. Justice Sutherland absolves the judiciary from responsibility when he concludes:

> The judicial function is that of interpretation; it does not include the power of amendment under the guise of interpretation. To miss the point of difference between the two is to miss all that the phrase "supreme law of the land" stands for and to convert what was intended as inescapable and enduring mandates into mere moral reflections.
>
> If the Constitution, intelligently and reasonably construed in the light of these principles, stands in the way of desirable legislation, the blame must rest upon that instrument, and not upon the court for enforcing it according to its terms. The remedy in that situation—and the only true remedy—is to amend the Constitution.

FREEDOM OF SPEECH AND OF ASSEMBLY

The Court was unanimous in *De Jonge* v. *Oregon,* 299 U.S. 353 (1937), in reversing a conviction under a state Criminal Syndicalism Law, where under the pleadings as inter-

preted by the state court, the only charge was that defendant attended a meeting called under the auspices of the Communist party. Mr. Chief Justice Hughes said that it was not necessary to inquire into the objectives of the Communist party, since "notwithstanding those objectives, the defendant still enjoyed his personal right of free speech and to take part in a peaceable assembly having a lawful purpose, although called by that party." After invoking the general rights of freedom of speech and of assembly, the Chief Justice continues:

> It follows from these considerations that, consistently with the Federal Constitution, peaceable assembly for lawful discussion cannot be made a crime. The holding of meetings for peaceable political action cannot be proscribed. Those who assist in the conduct of such meetings cannot be branded as criminals on that score. The question, if the rights of free speech and peaceable assembly are to be preserved, is not as to the auspices under which the meeting is held but as to its purpose; not as to the relations of the speakers, but whether their utterances transcend the bounds of the freedom of speech which the Constitution protects. If the persons assembling have committed crimes elsewhere, if they have formed or are engaged in a conspiracy against the public peace and order, they may be prosecuted for their conspiracy or other violation of valid laws. But it is a different matter when the State, instead of prosecuting them for such offenses, seizes upon mere participation in a peaceable assembly and a lawful public discussion as the basis for a criminal charge.

When we turn to *Herndon* v. *Lowry*, 301 U.S. 242 (1937), which reversed a conviction under the Georgia Anti-insurrection statute, we find four Justices dissenting. The crucial question in the case was whether the defendant had attempted to induce and incite others to join in combined forcible resistance to the lawful authority of the State. This, of course, depended upon the evidence. The majority say that "the only objectives appellant is proved to have urged are those having to do with unemployment and emergency relief which are devoid of criminality." They disregard documents found in his possession and the fact that he was soliciting membership in an organization which announced some aims that could be regarded as incitement to forcible resistance. The minority say that, though there was no direct evidence that he distributed such documents, "there was in the evidence not merely some but adequate and undisputed basis for inferring that he had been using the literature for the purposes for which he received it."

This evidence seems to be that he was a Communistic party member subject to discipline and a paid organizer to secure new members, that he received the literature for the purpose of distribution, that he had declared his adherence to the party program, and that "at the trial he made an extended statement to the court and jury in his defense, but did not refer in any wise to the literature or deny that he had been using it or distributing it." To this recital, Mr. Justice Van Devanter adds that the defendant was working among southern Negroes and that the literature in his possession was particularly adapted to appeal to them. As he puts it:

> The purpose and probable effect of such literature, when under consideration in a prosecution like that against Herndon, are to be tested and determined with appropriate regard to the capacity and circumstances of those who are sought to be influenced. In this instance the literature is largely directed to a people whose past and present circumstances would lead them to give unusual credence to its inflaming and inciting features.

For the majority, Mr. Justice Roberts puts the case in very narrow compass when he points out that "the question is not whether Georgia might, in analogy to what other states have done," have "made mem-

bership in the Communist party unlawful by reason of its supposed dangerous tendency even in the remote future." As illustrations of such different statutes, he refers to those of New York and California under which the convictions of Mr. Gitlow and Miss Whitney were sustained. Here the crucial question is whether it is incitement to insurrection merely to solicit persons to join the Communist party, in the absence of proof that the defendant brought the unlawful aims of the documents to the attention of others or that he approved them "or that the fantastic program they envisaged was conceived of by anyone as more than an ultimate ideal." Thus the majority position boils down to a judgment that in the particular case there was not adequate proof of direct incitement. The minority think that the proof was sufficient to permit the jury to draw the inference that it did.

The statute as applied in the particular case was held to be void for uncertainty in failing to "furnish a sufficiently ascertainable standard of guilt." The minority insisted that there was no uncertainty, since "the accused must intend that combined *forcible* resistance shall proximately result from his act of inducement." The majority say that under the doctrine of the state court, it would be enough to convict the defendant "if the jury thought he reasonably might foretell that those he persuaded to join the party might, at some time in the indefinite future, resort to forcible resistance of government." They add that "the question thus proposed to a jury involves pure speculation as to future trends of thought and action." And in conclusion, Mr. Justice Roberts says:

> The statute, as construed and applied, amounts merely to a dragnet which may enmesh anyone who agitates for a change of government if a jury can be persuaded that he ought to have foreseen his words would have some effect in the future conduct of others. No reasonably ascertainable standard of guilt is prescribed. So vague and indeterminate are the boundaries thus set to the freedom of speech and assembly that the law necessarily violates the guarantees of liberty embodied in the Fourteenth Amendment.

THE SOCIAL SECURITY CASES

State and national legislation imposing taxes and providing plans for unemployment compensation and for old-age pensions was sustained in four cases. The first case was *Chamberlin* v. *Andrews*, 299 U.S. 515 (1936), which involved the New York Unemployment Compensation Law which imposed the tax exclusively upon employers and, in the language of the New York Court of Appeals, provided for the investment of the funds in the obligations of the unemployment trust fund of the United States government. This was a pooled fund, such as was condemned by the Supreme Court in the Railroad Retirement Case (see THE AMERICAN YEAR BOOK, 1935, p. 41). On Nov. 23, 1936, the decision of the New York court sustaining the statute was affirmed by necessity by the Supreme Court, the sitting Justices being divided four to four, Mr. Justice Stone not sitting because of illness. This result presaged approval of the Social Security Program in any case in which Mr. Justice Stone could sit, provided there were no changes in the bench in the meantime.

Three such cases were argued in early April and early May, 1937, and on May 24, with varying dissents, were decided in favor of state and Federal legislation. The same points were urged in several cases, and the three opinions are companion pieces which in part incorporate each other by reference. *Carmichael* v. *Southern Coal Co.*, 301 U.S. 495 (1937), sustained the Alabama Unemployment Compensation Act against objections that it was not for a public purpose, that it was discriminatory, that its pooling provisions denied due process, and that the State had been coerced by the United States to surrender its sovereignty. *Steward Machine Co.* v. *Davis*, 301 U.S. 548 (1937), upheld the Federal tax on

employers of eight persons or more, with its provision for a credit of 90 per cent to those employers who have contributed to an approved state unemployment compensation fund. *Helvering* v. *Davis,* 301 U.S. 619 (1937), sustained a further Federal tax on employers more generally, with its provisions for spending money for old-age benefits. The issues involved in the three cases will be segregated for separate treatment.

COERCION UPON THE STATES

The complaint of coercion was premised upon the charge that the credit allowed to employers who contribute to state unemployment compensation plans would compel the States to adopt such plans in order to save their citizens from contributing to national funds which might not enure to the benefit of their own unemployed. Only Justices McReynolds and Butler accepted this position in full, and possibly they did not do so. With them it was intertwined with another objection that Federal control over the substances and administration of state laws involved a surrender by the State of a portion of its sovereignty. This latter objection was made also by Justices Van Devanter and Sutherland. It still leaves room for other forms of Federal-state co-operation to promote unemployment compensation, provided they leave the States adequately free in choosing and administering their own plans.

Whether Justices McReynolds and Butler go further than this is not wholly clear. The dissent of the former consists mainly of incorporation of a long veto message from President Franklin Pierce, and a few paragraphs of which the most nearly explicit is this:

> Ordinarily, I must think, a denial that the challenged action of Congress and what has been done under it amount to coercion and impair freedom of government by the people of the State would be regarded as contrary to practical experience. Unquestionably our federate plan of government confronts an enlarged peril.

Mr. Justice Butler's views must be inferred from the following excerpts from his opinion:

> The provisions in question, if not amounting to coercion in a legal sense, are manifestly designed and intended directly to affect state action in the respects specified. And, if valid as so employed, this "tax and credit" device may be made effective to enable federal authorities to induce, if not indeed to compel, state enactments for any purpose within the realm of state power, and generally to control state administration of state laws. . . .
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> . . . Each grant depends upon state compliance with conditions prescribed by federal authority. The amounts given being within the discretion of the Congress, it may at any time make available federal money sufficient effectively to influence state policy, standards and details of administration. . . .
>
> . . . Obviously the Act creates the peril of federal tax not to raise revenue but to persuade. Of course, each State was free to reject any measure so proposed. But, if it failed to adopt a plan acceptable to federal authority, the full burden of the federal tax would be exacted. And, as federal demands similarly conditioned may be increased from time to time as Congress shall determine, possible federal pressure in that field is without limit. . . .
>
> The terms of the measure make it clear that the tax and credit device was intended to enable federal officers virtually to control the exertion of powers of the States in a field in which they alone have jurisdiction and from which the United States is by the Constitution excluded.

Mr. Justice Sutherland, with whom Mr. Justice Van Devanter joins in dissent, clearly does not go so far. He opens his opinion as follows:

> With most of what is said in the [majority] opinion just handed down, I concur. I agree that the payroll tax levied is an excise within the power of Congress; that the de-

votion of not more than 90% of it to the credit of employers in states which require the payment of a similar tax under so-called unemployment-tax laws is not an unconstitutional use of the proceeds of the federal tax; that the provision making the adoption by the state of an unemployment law of a specified character a condition precedent to the credit of the tax does not render the law invalid. I agree that the states are not coerced by the federal legislation into adopting unemployment legislation. The provisions of the federal law may operate to induce the state to pass an employment law if it regards such action to be in its interest. But that is not coercion. If the act stopped here, I should accept the conclusion of the court that the legislation is not unconstitutional.

In approaching the issue of coercion for the majority, Mr. Justice Cardozo first recites the situation with respect to unemployment in the nation, including the facts that the States were unable to give the requisite relief and that the problem had become national, and says that "it is too late today for the argument to be heard with tolerance that in a crisis so extreme the use of the moneys of the nation to relieve the unemployed and their dependents is a use for any purpose narrower than the promotion of the general welfare." He then puts the issue as follows:

> In the presence of this urgent need for some remedial expedient, the question is to be answered whether the expedient adopted has overleapt the bounds of power. The assailants of the statute say that its dominant end and aim is to drive the state legislatures under the whip of economic pressure into the enactment of unemployment compensation laws at the bidding of the central government. Supporters of the statute say that its operation is not constraint, but the creation of a larger freedom, the states and the nation joining in a co-operative endeavor to avert a common evil.

After stating that "before Congress acted, unemployment compensation insurance was still, for the most part, a project and no more," the opinion continues:

> But if states had been holding back before the passage of the federal law, inaction was not owing, for the most part, to the lack of sympathetic interest. Many held back through alarm lest, in laying such a toll upon their industries, they would place themselves in a position of economic disadvantage as compared with neighbors or competitors. . . . Two consequences ensued. One was that the freedom of a state to contribute its fair share to the solution of a national problem was paralyzed by fear. The other was that in so far as there was failure by the states to contribute relief according to the measure of their capacity, a disproportionate burden, and a mountainous one, was laid upon the resources of the Government of the nation.
>
> The Social Security Act is an attempt to find a method by which all these public agencies may work together to a common end. Every dollar of the new taxes will continue in all likelihood to be used and needed by the nation as long as states are unwilling, whether through timidity or for other motives, to do what can be done at home. At least the inference is permissible that Congress so believed, though retaining undiminished freedom to spend the money as it pleased. On the other hand fulfillment of the home duty will be lightened and encouraged by crediting the taxpayer upon his account with the Treasury of the nation to the extent that his contributions under the laws of the locality have simplified or diminished the problem of relief and the probable demand upon the resources of the fisc. Duplicated taxes, or burdens that approach them, are recognized hardships that government, state or national, may properly avoid. . . . If Congress believed that the general welfare would better be promoted by relief through

local units than by the system then in vogue, the co-operating localities ought not in all fairness to pay a second time.

Who then is coerced through the operation of this statute? Not the taxpayer. He pays in fulfillment of the mandate of the local legislature. Not the state. Even now she does not offer a suggestion that in passing the unemployment law she was affected by duress. . . . For all that appears she is satisfied with her choice, and would be sorely disappointed if it were now to be annulled. The difficulty with the petitioner's contention is that it confuses motive with coercion.

Conceding that there may come a point where "pressure turns into compulsion, and ceases to be inducement," Mr. Justice Cardozo then affirms:

The point had not been reached when Alabama made her choice. We cannot say that she was acting, not of her unfettered will, but under the strain of a persuasion equivalent to undue influence, when she chose to have relief administered under laws of her own making, by agents of her own selection, instead of under federal laws, administered by federal officers, with all the ensuing evils, at least to many minds, of federal patronage and power. There would be a strange irony, indeed, if her choice were now to be annulled on the basis of an assumed duress in the enactment of a statute which her courts have accepted as a true expression of her will.

As a precedent for this conclusion, "if precedent be needed," there is invoked the Federal Estate Tax with its 80 per cent credit for state inheritance taxes, which was unsuccessfully assailed on the same ground. In distinguishing *United States* v. *Butler* which condemned the processing tax of the Agricultural Adjustment Act (see THE AMERICAN YEAR BOOK, 1936, p. 38), Mr. Justice Cardozo states the points made by the majority in that case, says that "none of them is applicable to the situation here developed" and enumerates the differentiating elements thereof as follows:

(a) The proceeds of the tax in controversy are not earmarked for a special group.

(b) The unemployment compensation law which is a condition of the credit has had the approval of the state and could not be a law without it.

(c) The condition is not linked to an irrevocable agreement, for the state at its pleasure may repeal its unemployment law, §903 (a) (6), terminate the credit, and place itself where it was before the credit was accepted.

(d) The condition is not directed to the attainment of an unlawful end, but to an end, the relief of unemployment, for which nation and state may lawfully co-operate.

That the Court still recognizes limits to the power of Congress to induce conduct by offering escapes from taxation, is evident from the following passage in the majority opinion:

In ruling as we do, we leave many questions open. We do not say that a tax is valid, when imposed by act of Congress, if it is laid upon the condition that a state may escape its operation through the adoption of a statute unrelated in subject matter to activities fairly within the scope of national policy and power. No such question is before us. In the tender of this credit Congress does not intrude upon fields foreign to its function. The purpose of its intervention, as we have shown, is to safeguard its own treasury and as an incident to that protection to place the states upon a footing of equal opportunity. Drains upon its own resources are to be checked; obstructions to the freedom of the states are to be leveled. It is one thing to impose a tax dependent upon the conduct of the taxpayers, or of the state in which they live, where the conduct to be stimulated or discouraged is unrelated to the fiscal need subserved by the tax in its normal operation, or to any other end legitimately national. . . . It is quite another thing to say that

a tax will be abated upon the doing of an act that will satisfy the fiscal need, the tax and the alternative being approximate equivalents. In such circumstances, if in no others, inducement or persuasion does not go beyond the bounds of power. We do not fix the outermost line. Enough for present purposes that wherever the line may be, this statute is within it. Definition more precise must abide the wisdom of the future.

The argument based on alleged coercion was also made against the constitutionality of the Alabama unemployment compensation statute, but Mr. Justice Stone, after referring to the rejection of the argument against the Act of Congress, answers as follows:

> As the Social Security Act is not coercive in its operation, the Unemployment Compensation Act cannot be set aside as an unconstitutional product of coercion. The United States and the State of Alabama are not alien governments. They coexist within the same territory. Unemployment within it is their common concern. Together the two statutes now before us embody a co-operative legislative effort by state and national governments, for carrying out a public purpose common to both, which neither could fully achieve without the co-operation of the other. The Constitution does not prohibit such co-operation.

SURRENDER OF STATE SOVEREIGNTY

On this point, in dissenting in the case that sustained the Act of Congress, Mr. Justice Sutherland says that, to make the credit available, a State must deposit the proceeds of the state tax "in the federal treasury, upon terms which make the deposit suspiciously like a forced loan to be repaid only in accordance with restrictions imposed by federal law." Although the State is free at any time to repeal its compensation law, its withdrawal of funds in the Federal treasury is, prior to such repeal, subject to definite restrictions upon pain of losing the certification of its law. Mr. Justice Sutherland finds no assurance in the Federal Act that these restrictions on withdrawal of monies previously paid do not continue after repeal of the state law. Either in support of his fears on this score or as an independent objection, he refers to the prescription of Federal supervision to ensure that the State retains the features of its law which first won federal certification, and says:

> The federal government, therefore, in the person of its agent, the board, sits not only as a perpetual overseer, interpreter and censor of state legislation on the subject, but, as lord paramount, to determine whether the state is faithfully executing its own law—as though the state were a dependency under pupilage and not to be trusted.

It must remain uncertain whether Mr. Justice Sutherland would think this consent to Federal administrative supervision a surrender of state sovereignty if the State were free to withdraw its funds and use them as it pleases upon abandoning its compensation system. He does not complain of state surrender in his dissent from the decision sustaining the state law. His objection on this score, whatever its scope, is not to coercion of the State, but to voluntary surrender by the State. This he elaborates as follows:

> The effect of the dual distribution of powers is completely to deny to the states whatever is granted exclusively to the nation, and, conversely, to deny to the nation whatever is reserved exclusively to the states. . . . The purpose of the Constitution in that regard does not admit of doubt or qualification; and it can be thwarted no more by voluntary surrender from within than by invasion from without.
>
> Nor may the constitutional objection suggested be overcome by the expectation of public benefit resulting from the federal participation authorized by the act. . . . Moreover, everything which the act seeks do to for the relief of un-

employment might have been accomplished, as is done by this same act for the relief of the misfortunes of old age, without obliging the state to surrender, or share with another government, any of its powers.

For the majority, Mr. Justice Cardozo says flatly that the state "does not even bind itself that the moneys paid into the federal fund will be kept there indefinitely or for any stated time." And Mr. Justice Stone, in sustaining the Alabama law, says that "the statute may be repealed at the will of the legislature, and in that case the state will be free to withdraw at any time its unexpended share of the Unemployment Trust Fund from the treasury of the United States, and to use it for any public purpose." This cannot be supported by any express words in the Social Security Act. Neither Justice invokes any such words. Yet the interpretation is authoritative for the moment. This makes it uncertain what the majority would say on the constitutional issue if Congress should explicitly declare that funds to the credit of the State must be used for the original purpose for which they were paid in, even after the state law has been repealed or so altered as to be denied Federal certification.

With the freedom of the State after repeal of its law established, the fact that the State chooses to meet Federal requirements to secure certification of its law and the credit to its employers on their Federal tax is declared not to be a surrender of sovereignty, whether achieved by contract or by statute. "The power to contract," says Mr. Justice Stone, "and the power to select appropriate agencies and instrumentalities for the execution of state policy are attributes of state sovereignty. They are not lost by their exercise." Without assurance that the state law is one that entitles employers to the credit on the Federal tax, says Mr. Justice Cardozo, the credit would be futile. "An unemployment law framed in such a way that the unemployed who look to it will be deprived of reasonable protection is one in name and nothing more." Within conditions to obtain necessary assurance, the States are allowed a wide range of judgment as to the system to be adopted. Opinions may differ as to what are essential safeguards, but "in determining essentials Congress must have the benefit of a fair margin of discretion." And in conclusion on this point, Mr. Justice Cardozo says:

> Alabama is seeking and obtaining a credit of many millions in favor of her citizens out of the Treasury of the nation. Nowhere in our scheme of government—in the limitations express or implied of our federal constitution—do we find that she is prohibited from assenting to conditions that will assure a fair and just requital for benefits received.

STATE TAXING POWER

From the decision sustaining the Alabama statute, Mr. Justice McReynolds dissented generally, without assigning or specifying his reasons. The dissent of Justices Sutherland, Van Devanter and Butler was confined to the pooling of the proceeds of the pay-roll tax in a common fund, whereby "a disproportionately heavy burden will be imposed by the tax upon those whose operations contribute *least* to the evils of unemployment, and, correspondingly, the burden will be lessened in respect of those whose operations contribute *most*." By way of contrast, Mr. Justice Sutherland makes approving reference to the Wisconsin plan under which "each employer's contributions are credited to his separate account, and benefits are paid from his account only to his former employees."

On the pooling of the proceeds, Mr. Justice Stone for the majority says that "a tax is not an assessment of benefits," but a "means of distributing the burden of the cost of government." The "only benefit to which the taxpayer is constitutionally entitled is that derived from his enjoyment of the privileges of living in an organized society, established and safeguarded by the devotion of taxes to public purposes." To this he adds that "any other view would preclude

the levying of taxes except as they are used to compensate for the burden on those who pay them, and would involve the abandonment of the most fundamental principle of government—that it exists primarily to provide for the common good." A corporation cannot "object to the use of the taxes which it pays for the maintenance of schools because it has no children." With more special reference to the particular tax before the Court, Mr. Justice Stone continues:

> Even if a legislature should undertake, what the Constitution does not require, to place the burden of a tax for unemployment benefits upon those who cause or contribute to unemployment, it might conclude that the burden cannot justly be apportioned among employers according to their unemployment experience. Unemployment in the plant of one employer may be due to competition with another, within or without the state, whose factory is running to capacity; or to tariffs, inventions, changes in fashions or in market or business conditions, for which no employer is responsible, but which may stimulate the business of one and impair or even destroy that of another. Many believe that the responsibility for the business cycle, the chief cause of unemployment, cannot be apportioned to individual employers in accordance with their employment experience; that a business may be least responsible for the depression from which it suffers the most.
>
> The Alabama legislature may have proceeded upon the view, for which there is abundant authority, that the causes of unemployment are too complex to admit of a meticulous appraisal of employer responsibility. It may have concluded that unemployment is an inseparable incident of modern industry, with its most serious manifestations in industrial production; that employees will be best protected, and that the cost of the remedy, at least until more accurate and complete data are available, may best be distributed, by imposing the tax evenly upon all industrial production, and in such form that it will be added to labor costs which are ultimately absorbed by the public in the prices which it pays for consumable goods.

These considerations are deemed to be for the legislature rather than for the Court, since "the state is free to distribute the burden of a tax without regard to the particular purpose for which it is to be used," provided the purpose is a public one. On the absence of any necessity to confine the taxing power to securing reciprocity of burdens and benefits, Mr. Justice Stone adds:

> Since the appellees may not complain if the expenditure has no relation to the taxed class of which they are members, they obviously may not complain because the expenditure has *some* relation to that class, that those benefited are employees of those taxed; or because the legislature has adopted the expedient of spreading the burden of the tax to the consuming public by imposing it upon those who make and sell commodities. It is irrelevant to the permissible exercise of the power to tax that some pay the tax who have not occasioned its expenditure, or that in the course of the use of its proceeds for a public purpose the legislature has benefited individuals, who may or may not be related to those who are taxed.

It is further established by the opinion that the tax is valid though not on property or its use, since taxes may be levied on the exercise of personal rights and privileges even though the enjoyment thereof could not be prohibited. While taxes must be levied for a public purpose, "we need not labor the point that expenditures for the relief of the unemployed, conditioned on unemployment alone, without proof of indigence of recipients of the benefits, are a permissible use of state funds." Reference is then made to the widespread effects of unemployment which make "the evils of the attendant social and economic wastage permeate the entire social structure." The purpose of

the payments being public, that purpose cannot be "defeated because the execution of it involves payments to individuals."

NATIONAL TAXING AND SPENDING POWER

The question whether the Federal pay-roll tax on employers of eight or more employees was really a tax or merely a club to coerce state unemployment compensation laws has already been considered. As a tax, it was sustained as an indirect tax, not requiring apportionment among the States according to population. Whether an "excise" or not "is not of critical importance. If not that, it is an 'impost.'" As an indirect tax, it is levied according to the canon of uniformity, since "the uniformity exacted is geographical, not intrinsic."

Aside from the question of apportionment, "the subject matter of taxation open to the power of Congress is as comprehensive as that open to the power of the states." Taxes, duties, imposts and excises together "include every form of tax appropriate to sovereignty." Historically excises have not been confined to the enjoyment of commodities. On the subject of the tax, Mr. Justice Cardozo continues:

> The historical prop failing, the prop or fancied prop of principle remains. We learn that employment for lawful gain is a "natural" or "inherent" or "inalienable" right, and not a "privilege" at all. But natural rights, so called, are as much subject to taxation as rights of less importance. An excise is not limited to vocations or activities that may be prohibited altogether. It is not limited to those that are the outcome of a franchise. It extends to vocations or activities pursued as of common right. What the individual does in the operation of a business is amenable to taxation just as much as what he owns, at all events if the classification is not tyrannical or arbitrary. . . . Employment is a business relation, if not itself a business. It is a relation without which business could seldom be carried on effectively. The power to tax the activities and relations that constitute a calling considered as a unit is the power to tax any of them. The whole includes the parts.

These positions were accepted by Justices Sutherland and Van Devanter, and not specifically contested by Justices McReynolds and Butler. The proposed national spending to aid States in the administration of their unemployment compensation laws was not considered, because such spending had been merely "authorized" and no appropriations had been made. Even without a separability clause, the spending provisions, it was said, could be expunged and the taxing provisions remain intact.

The spending power received explicit treatment in *Helvering* v. *Davis* which sustained the old-age benefit provisions of the Social Security Act. The tax here was not confined to employers of eight or more, though there were several classes exempted. This tax contained no provision for credits for compliance with state laws. The tax was sustained on the authority of the Steward Machine Case, and the proposed spending for old-age benefits was sanctioned as spending for the general welfare. In addition to giving details as to the situation of the indigent aged and the effect on the state of the nation, Mr. Justice Cardozo considered the spending power more generally as follows:

> The scheme of benefits created by the provisions of Title II is not in contravention of the limitations of the Tenth Amendment.
>
> Congress may spend money in aid of the "general welfare." . . . There have been great statesmen in our history who have stood for other views. We will not resurrect the contest. It is now settled by decision. . . . The conception of the spending power advocated by Hamilton and strongly reinforced by Story has prevailed over that of Madison, which has not been lacking in adherents. Yet difficulties are left when the power is conceded. The line must still

be drawn between one welfare and another, between particular and general. Where this shall be placed cannot be known through a formula in advance of the event. There is a middle ground or certainly a penumbra in which discretion is at large. The discretion, however, is not confided to the courts. The discretion belongs to Congress, unless the choice is clearly wrong, a display of arbitrary power, not an exercise of judgment. This is now familiar law. "When such a contention comes here we naturally require a showing that by no reasonable possibility can the challenged legislation fall within the wide range of discretion permitted to the Congress.". . . Nor is the concept of the general welfare static. Needs that were narrow or parochial a century ago may be interwoven in our day with the well-being of the Nation. What is critical or urgent changes with the times.

The purge of nation-wide calamity that began in 1929 has taught us many lessons. Not the least is the solidarity of interests that may once have seemed to be divided. Unemployment spreads from State to State, the hinterland now settled that in pioneer days gave an avenue of escape. . . . Spreading from State to State, unemployment is an ill not particular but general, which may be checked, if Congress so determines, by the resources of the Nation. . . .

Congress did not improvise a judgment when it found that the award of old age benefits would be conducive to the general welfare. . . .

The problem is plainly national in area and dimensions. Moreover, laws of the separate states cannot deal with it effectively. Congress, at least, had a basis for that belief. States and local governments are often lacking in the resources that are necessary to finance an adequate program of security for the aged. This is brought out with a wealth of illustration in recent studies of the problem. Apart from the failure of resources, states and local governments are at times reluctant to increase so heavily the burden of taxation to be borne by their residents for fear of placing themselves in a position of economic disadvantage as compared with neighbors or competitors. . . . A system of old age pensions has special dangers of its own, if put in force in one state and rejected in another. The existence of such a system is a bait to the needy and dependent elsewhere, encouraging them to migrate and seek a haven of repose. Only a power that is national can serve the interests of all.

Whether wisdom or unwisdom resides in the scheme of benefits set forth in Title II, it is not for us to say. The answer to such inquiries must come from Congress, not the courts. Our concern here, as often, is with power, not with wisdom. Counsel for respondent has recalled to us the virtues of self-reliance and frugality. There is a possibility, he says, that aid from a paternal government may sap those sturdy virtues and breed a race of weaklings. If Massachusetts so believes and shapes her laws in that conviction, must her breed of sons be changed, he asks, because some other philosophy of government finds favor in the halls of Congress? But the answer is not doubtful. One might ask with equal reason whether the system of protective tariffs is to be set aside at will in one state or another whenever local policy prefers the rule of *laissez faire*. The issue is a closed one. It was fought out long ago. When money is spent to promote the general welfare, the concept of welfare or the opposite is shaped by Congress, not the states. So the concept be not arbitrary, the locality must yield.

The dissent in this case was confined to Justices McReynolds and Butler. Without further specification they contented themselves with saying that they "are of opinion that the provisions of the Act here chal-

lenged are repugnant to the Tenth Amendment."

DISCRIMINATION

Except for the provision for a pooled fund, there was no dissent from the majority rulings that the discriminations and exemptions in the three statutes were not sufficiently arbitrary or unreasonable to violate the due-process or equal-protection clauses. The opinions on the two Federal statutes confined themselves mainly to adopting what was said by Mr. Justice Stone in sustaining the Alabama statute. The Federal tax assumed to be animated by the provisions for old-age security was one on employers and employees without restriction as to the number employed, but neither tax "is applicable to certain types of employment, such as agricultural labor, domestic service, service for the national or state governments, and service performed by persons who have attained the age of 65 years."

Among the discriminations sustained in the state unemployment-compensation law are the exemptions of employers of less than eight, of employers of "agricultural laborers, domestic servants, seamen, insurance agents, or close relatives," and the exclusion of charitable institutions, interstate railways, and the governments of the State and United States. Corresponding exemptions and exclusions of employees were left unconsidered, on the ground that the employer could not complain of them, since the validity of the tax on him was not dependent upon the validity of the tax on them. The benefits of unemployment compensation were restricted to employees of employers subject to the tax. Mr. Justice Stone suggests particular justifications for some of these differentiations, but in the main relies on the latitude accorded to the legislature in selecting the subjects of taxation.

NATIONAL POWERS

The amended Frazier-Lemke Act was sustained after being interpreted so as to preserve the right of the mortgagee to bid in the property at public sale and to make the three-year stay on foreclosure subject to prior termination in the discretion of the court. An accused in the District of Columbia cannot object because government employees sit on the jury. A jury is not necessary for conviction of an offense, intrinsically petty, even though the penalty may be as high as imprisonment for ninety days or a fine up to $300. A special income tax of half the profit on the sale of silver bullion may apply retroactively for the short period while governmental purchase of silver was widely agitated. A landlord's claim for future rent may be restricted in bankruptcy proceedings to rent for three years. The right to recover processing taxes paid under an unconstitutional statute may be conditioned upon a showing that the burden of the tax has not been shifted, and the remedy may be confined to administrative proceedings, subject to the requisite judicial review.

A processing tax may be levied on the processing in the United States of products from the Philippine Islands, and the proceeds of the tax may be allocated to the Government of the Islands to be used according to its discretion for public purposes. Broad discretion may be vested in the President to determine when an embargo on the shipment of munitions shall operate, since the field of foreign relations is one in which the reserved powers of the States have no play and one in which presidential power is unusually extensive.

A Federal tax of $200 on dealers in firearms is a valid tax, notwithstanding its incidental regulatory effect. The application of the Federal income tax to the salary of the Chief Engineer of a municipal Bureau of Water Supply is an interference with a state governmental function and therefore unconstitutional. Congress may make the lawfulness of the interstate transportation of convict-made goods dependent on the law of the State of destination, and may require all such goods so shipped to be duly labelled.

STATE POWERS

With the Congressional consent

established as valid, a State may forbid the entrance of goods made by convict labor. A State may put a discriminatory tax upon the introduction of beer, since the Twenty-first Amendment abrogates commerce-clause restrictions on the power of the State of destination. A State may not apply its income tax to the salary of the general counsel of the Panama Railroad Company, since the corporation, though chartered by a State, is wholly owned by the United States and is an instrument for executing governmental functions. A State may apply a use tax to the use of products brought in from other States, where the rate of the use tax is the same as that of the sales tax, and against the use tax may be credited sales taxes paid either to the taxing state or to other States. Whether this credit of sales taxes paid to other States is essential, was expressly left open.

Against objections premised on the Fourteenth Amendment, other state taxes were sustained. A State may tax domiciliaries on income from extra-state land and may tax a stock exchange seat owned by a non-resident. It may tax a foreign corporation on stocks in other foreign corporations when the taxpayer so conducts its operations in the taxing State as to acquire what is called a business situs. It may impose a tax on chain stores under a plan whereby the tax on each unit of the chain within the State is graduated according to the number of units in the chain everywhere.

This recital by no means exhausts the list of cases of importance decided during the year. Others that do not admit of summary statement have necessarily been omitted. The general trend of the Court's attitude during a year of stress should, however, be apparent from what has been reviewed in detail and what has been briefly sketched.

THE ELECTIONS OF 1937

By Thomas N. Hoover

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CONGRESSIONAL ELECTIONS

In Arkansas, the successor to the late Senator Joseph T. Robinson was elected. The contest was between Carl E. Bailey, champion of the New Deal, and John E. Miller, conservative candidate. Miller was elected by a vote of 67,039 to 43,509. An election was held in Alabama to choose a successor to Hugo L. Black who resigned his seat in the United States Senate to become a Justice of the United States Supreme Court. Representative Lister Hill was elected to fill the post temporarily filled by Mrs. Graves, wife of the Governor.

In the House of Representatives, Bruce Barton, Republican, was elected from the 17th New York District formerly represented by Theodore A. Peyser, Democrat. Ralph A. Gamble, Democrat, and Lewis K. Rockefeller, Democrat, were elected to fill the vacancies in the 23d and 27th New York Districts respectively. David E. Satterfield Jr. succeeded Andrew J. Montague in the 3rd Virginia District, and Lawrence J. Connery took the place of William P. Connery Jr. in the 7th Massachusetts District.

GOVERNORS

In the comparatively few elections held in 1937, only two governors were elected. The Virginia voters elected James H. Price, Democrat, for the four-year term. A. Harry Moore, Democrat, was elected Governor of New Jersey over Lester H. Clee, Republican.

STATE LEGISLATIVE ELECTIONS

In New York, the Republicans made decided gains in the Assembly, increasing their majority from two

to 24. The Republicans also elected a substantial majority of the delegates to the forthcoming Constitutional Convention.

In New Jersey, also, the Republicans won complete control of the legislature. The former Senate of 10 Democrats and 10 Republicans was changed to 13 Republicans and eight Democrats. The Assembly changed from 39 Democrats and 20 Republicans to 41 Republicans and 19 Democrats.

STATE ISSUES

Few state issues were submitted to the voters in 1937. New York voters amended the Constitution to provide for a four-year term for governor and the election of that official in other than Presidential election years.

The voters of Texas adopted five amendments to the state Constitution. One amendment provided for the regulation of banking institutions. Another had to do with roads and bridges in Harris County. Still another provided that property shall not be assessed for taxation for more than a fair cash market value. The remaining two amendments give the legislature power to render assistance to needy blind and destitute children.

At an election in Maine Aug. 16, the voters rejected an old age pension act by a vote of 80,449 to 41,482.

Three amendments were adopted by the voters of Missouri, prohibiting the granting of public funds to corporations, providing that retirements to public employees may be paid from public funds, and providing for a state Conservation Commission.

Twenty-six amendments were approved by the voters of Georgia, most of which were local in character. By a vote of 103,097 to 94,575, the voters of Georgia rejected a referendum measure for legalization and control of alcoholic beverages.

MUNICIPAL ELECTIONS

The turn from the Democratic Party to the Republican Party was best seen in the municipal elections of the year, not only in the larger cities but in the unusually large majorities by which Republican candidates for mayor were elected in smaller cities.

Mayor La Guardia of New York City was re-elected by a large majority over his Democratic opponent Jeremiah T. Mahoney, the candidate of Tammany Hall and of Postmaster General Farley. Thomas E. Dewey, the young Republican prosecutor of New York racketeers, was elected District Attorney of New York County by a substantial majority. Both Mayor La Guardia and District Attorney Dewey have been mentioned for national honors.

Mayor Harold H. Burton, Republican, of Cleveland, O. was re-elected by a large majority. Mayor Burton has also been frequently mentioned as a Presidential possibility in 1940.

Great interest centered in the mayoralty contest in Detroit where the C.I.O. (Committee of Industrial Organization) attempted to seize the reins of government. Patrick O'Brien, the Committee's candidate, was severely defeated by Richard W. Reading, conservative. Republican mayors were returned to office in the industrial centers of Ohio over the bitter opposition of C.I.O.

CHRONOLOGY OF NATIONAL AFFAIRS

(From *The New York Times,* January 1, 1938)

THE PRESIDENT

Jan. 6—In message to Congress President Roosevelt sees no need for constitutional amendment and looks to courts for progressional interpretations. In message two days later he predicts a balanced budget for 1938.

Jan. 11—He asks Congress for $790,000,000 for a five-month relief plan.

Jan. 12—Specifying twelve major changes, the President asks Con-

gress for a program for administrative reorganization.

Jan. 16—The National Employment Service found jobs in 1936 for 1,510,463 in private employment, according to the Secretary of Labor.

Jan. 18—With the Secretary of the Interior as chairman, the President forms a National Power Policy Committee to invent program for electric power.

Jan. 20—In second inaugural address the President promises aid for people "who have too little" and pledged administrative solutions for problems of our augmenting "complex civilization."

Jan. 22—Professor Roswell Magill of Columbia University is appointed Under-Secretary of the Treasury.

Feb. 5—President Roosevelt demands of Congress reforms for the Federal judiciary with a Supreme Court of fifteen members, maximum, if justices decline to accept retirement at 70 years. (See National Legislation.)

Feb. 16—Following his suggestion made Feb. 12 that arbitration committees settle disputes between farm landlords and tenants, the President urges Congress to deal with the problem.

Feb. 17—Paul V. McNutt is appointed High Commissioner of the Philippines.

Feb. 20—Invoking the Walsh-Healey act, the Department of Labor demands steel for the navy from the United States Steel Corporation.

Feb. 22—The President urges the New York Assembly to ratify the Federal Child Labor Amendment.

Feb. 27—Urging enactment, the President furnishes state governors with draft of model soil conservation bill.

March 1—The Sumner-McCarran bill allowing justices to retire at 70 on full pay is signed. It was passed, 76–4, by Senate on Feb. 26.

March 5—At Democratic victory dinner the President rebukes opposers of his court-reform plan of Feb. 5. On March 11 the plan is disapproved (6 to 1) by the American Bar Association.

March 27—The President, through Senator Robinson, sees no "immediate need" for legislation in regard to labor's usurpation of property in "sit-in" strikes.

April 15—"New money" borrowing to meet the deficiency in the Treasury's working balance, Secretary Morgenthau announces.

April 20—While strongly urging economy for the Administration, the President, by message, asks Congress for $1,500,000,000 for relief.

April 26—The President appoints a board to investigate grievances of a local division of Brotherhood of Railway Clerks.

May 19—Holding the Merritt bill, asking for $5,000,000 for Federal participation in New York's World Fair of 1939 to be unconstitutional, the President vetoes the measure.

May 21—Labor bill for minimum hours and wages is drafted by the New Deal Administration, and six days later the President asks Congress to include abolishment of child labor in the project.

June 8—A subsidy of $160,000,000 for merchant ships is asked of Congress by the President.

July 6—The President suggests a 10 per cent cut on all national outlays—a saving of $400,000,000.

July 9—The President outlaws strikes among government employees and limits their powers of collective bargaining.

July 20—Having written Senator Barkley on July 15, the day after the death of White House spokesman, Senator Robinson, that the fight for reform of judiciary must continue, the President's bill is reported shelved by executive order.

Aug. 12.—Senator Hugo L. Black is nominated to fill the vacancy in the Supreme Court by the resignation of Justice Willis Van Devanter on June 2. On account of the Senator's alleged affiliations with the K.K.K., the Senate does not confirm the nomination until Aug. 17 (63 to 16). Justice Black takes his seat Oct. 4.

Sept. 2.—The Sun-Clearance bill is signed, and the President goes on a trip to Pacific Northwest.

Oct. 2—Treasury deficit for first quarter of fiscal year 1937–38 announced to be $273,823,428 or $251,010,259 lower than the identical period of 1936–37.

Nov. 19—The President orders the Federal Trade Commission to investigate the charges that the rise in the cost of living is due to monopolies illegally operating.

Nov. 29—In a message to Congress the President urges a revision of the Federal Housing Act and launches a private housing two-year plan calling for from $12,000,000,000 to $16,000,000,000.

Dec. 4—The President contemplated a shaving of expenditures $800,000,000 in order to produce a balanced budget for the next fiscal year 1938–39.

NATIONAL LEGISLATION

Jan. 6.—As of Jan. 8, both Houses pass arms embargo measures to prevent direct or indirect shipments of arms to Spain or other countries at war.

Jan. 22—Senate subcommittee hears charges against labor for trying to retard army and navy contracts being filled at private plants and counter charges against official espionage.

Jan. 28—The Ramspeck bill placing all postmasters in civil service is passed by the House.

Feb. 3—The $948,735,000 Deficiency bill is passed by the Senate.

Feb. 13—The President's court reform plan is denounced by Glass and Wheeler in the Senate, while Senator La Follette defends it by radio and majority leaders seek a modification. The result of the latter is that on Feb. 17 compromise resolutions are introduced by Senators Wheeler, Bone and Burke; one gives Congress veto power over Supreme Court rulings; the other sets 75 as the age of compulsory retirement for justices.

Feb. 23—Both Senate and House Foreign Relations Committee report favorably on the Pittman resolution expanding the neutrality powers of the President in foreign wars. The House passes 374–2, the McReynolds substitute on March 18.

Feb. 24—In the Senate, Wagner of New York introduces a Low-rent Housing and Slum-Clearance bill carrying $1,000,000,000.

Feb. 25—A joint resolution extends the powers of the executive until June 12, 1940, to enter into trade agreements with foreign nations.

March 5—The $526,555,000 Naval Supply bill is passed by the House. The Senate cuts it to $512,847,808, and passes it, 64–11, March 22.

March 31—"Sit-in" strikes are defended by Wagner of New York in the Senate, and the next day Byrnes of South Carolina introduces as a resolution a "declaration of public policy" against such strikes—an amendment to the Guffey-Vinson Coal bill.

April 3—"Absolute fireproof" ships are recommended by Senate's Commerce Committee.

April 5—The Senate passes the Guffey-Vinson Coal bill, 58–15, having defeated the Byrnes amendment of April 1, 48–36.

April 15—The Gavagan Anti-Lynching bill is passed on sectional lines by the House, 277–119. It is defeated in the Senate, 41–34, on July 26.

April 23—The House passes the Agricultural $927,000,000 bill, viva voce, having cut it $5,000,000 less than the budgetary estimate, and declined a cut of 10 per cent suggested by Tabor of New York.

April 29—Congress replaces the temporary neutrality law of 1936 by a permanent one.

April 30—The War Department bill carrying $416,413,382 is passed by the House. (The highest was in 1936, calling for $611,362,604).

May 12—The new TVA dam at Gilbertsville, Ky., with an expenditure of $112,000,000, is authorized by the Senate.

May 18—The President's court reform project is discouraged by a vote of 10 to 8 in the Senate's Judiciary Committee.

June 29—The Senate ratifies two treaties, five conventions and one protocol signed at the Inter-Amer-

ican Conference for the Maintenance of Peace at Buenos Aires, December, 1936.

July 22—The court reform compromise bill of February is defeated in the Senate, 70–20.

July 31—After revising the Child Labor Amendment, the Senate, 56–28, passes the Wages and Hours bill.

Aug. 11—To export helium, the non-inflammable gas, in "non-military" quantities is made legal by the Senate.

Aug. 21—Congress adjourns.

Nov. 15—The President opens a special session with a message, in which he places Congressional business paramount to his own projects.

Dec. 6—The compulsory wheat bill is defeated in the House, 85–76.

Dec. 15—The A.F.L. wage-hour bill is defeated in the House, 162–131.

Dec. 17—The Senate passes the farm bill, 59–29.

Dec. 21—Special session closes with only transitory action on housing bill.

COURT RULINGS

Jan. 2—Temporary injunction is issued by Circuit Court to oust "sit-in" strikers at Fisher Body plants, Flint, Mich. Strikers, on Feb. 2, defy the ouster ordered by the court.

Jan. 11—The collective bargaining clause in the Wagner Act is declared to be unconstitutional by the San Francisco United States Circuit Court of Appeals.

March 1—The Supreme Court declares constitutional the gold ban act of June, 1933.

March 15—"Sit-in" strikers at eight Chrysler Corporation plants at Detroit are served with mandatory injunction ordering evacuation by local Circuit Court Judge Allan Campbell. Four days later he signs an order for their arrest.

March 29—Minimum Wages for Women Law adopted by the State of Washington is declared constitutional, 5–4, by the United States Supreme Court; also the revised Frazier-Lemke Farm Mortgage Moratorium Law and the collective bargaining sections in the Railway Labor Act.

April 12—With one unanimous vote and others five to four, the Supreme Court upholds, in five submitted cases, the National Labor Relations Act.

April 16—Social Security Act, in its insurance for the unemployed and old age clauses, is held unconstitutional by the United States Court of Appeals at Boston, Mass. By a vote of 5 to 4 the Supreme Court on May 27 reverses this opinion.

April 26—Holding the Georgia Reconstruction Law to be illegally applied, the Supreme Court, 5—4, frees Angelo Herndon, Negro communist.

May 17—The Supreme Court upholds tax on chain stores as imposed in Louisiana.

June 2—Associate Justice Willis Van Devanter, having served the Supreme Court for twenty-six years, retires at the age of 78.

June 29—New York State communists lose party status according to ruling of local Supreme Court.

Nov. 8—The right of States to tax outside concerns for privilege to do business locally is upheld by the United States Supreme Court.

Nov. 18—A Federal court finds the Byrnes Law, which prohibits interstate traffic in strike-breakers, not violated in the Rand-Bergoff case.

Dec. 7—A posthumous exoneration is given Andrew W. Mellon by the Board of Tax Appeals on charge of income tax fraud.

Dec. 29—The Supreme Court rules, 7–2, that evidence due to tapped telephone wires cannot be used by prosecution in criminal trials.

POLITICS

Jan. 7—Dr. Glenn Frank is ousted as president of University of Wisconsin, due to state political influence on the Regents.

Feb. 15—Governor Hoffman of New Jersey, contrary to Governor Murphy's attitude in Michigan, declares "sit-in" strikes to be illegal

and the participators subject to prosecution.

Feb. 24—Dr. Francis E. Townsend, advocate of national millennium with $200 per month for every one, is convicted of contempt of House of Representatives, and, March 12, is sentenced to thirty days and a $100 fine.

Feb. 25—A constitutional amendment is projected by Senator Borah to redefine the Fourteenth Amendment, in regard to state rights.

March 5—Official regrets are expressed by Secretary Hull for the recent characterization of Hitler by Mayor La Guardia of New York City.

April 1—Massachusetts measure for repeal of teachers oath to Constitution is vetoed by Governor Hurley.

April 6—A bill outlawing "sit-in" strikes is passed by Vermont legislature.

June 6—Mayor La Guardia declares that he aspires to make New York a labor union city, and two days later Mayor Daniel Knaggs of Munroe, Mich., calls on armed volunteers to reopen a local steel plant.

June 23—Governor Earle of Pennsylvania advocates third term for President Roosevelt.

July 19—Governor Lehman of New York opposes Supreme Court reform measure. "It is dangerous," he writes in letter to Senator Wagner.

July 21—Senator Alben Barkley of Kentucky is elected Democratic leader in the Senate in succession to the late Senator Joseph T. Robinson of Arkansas.

Aug. 2—Christopher D. Sullivan is elected head of Tammany Hall.

Aug. 25—To counteract the effect of the forces of labor supporting a second term for Mayor La Guardia of New York, Senator Copeland, the opposition Tammany candidate, denounces Lewis Committee for Industrial Organization as a "law-breaking union."

Oct. 11—In New York City Mayor La Guardia vetoes a five-day work week for city employees as impractical.

Oct. 17—Governor Quinn of Rhode Island prevents opening of Narragansett race track by martial law.

Oct. 18—With the worst decline in six years on the New York Stock Exchange, the cause is attributed by some to taxation and alleged Federal curbs on industry; by others, to demoralization of production caused by strikes.

Nov. 2—In New York City, with President Roosevelt privately encouraging such a consummation and Governor Lehman publicly opposing it, Fiorello H. La Guardia is re-elected Mayor—the first reform Mayor to be so honored—and Thomas E. Dewey, the Governor's special prosecutor of "rackets," is elected District Attorney by a non-political electorate.

Dec. 26—District Attorney-elect Dewey picks his staff from his aides in the "rackets" prosecutions with Barent Ten Eyck as head of Frauds Bureau.

LABOR

Jan. 2—General Motors will not negotiate with employees as long as a "sit-in" strike is maintained at its plants, the president, Alfred P. Sloan, Jr., insisting on property rights; 44,500 men forced into idleness.

Jan. 3—"Sit-in" strikes defy court injunction to vacate Fisher Body plants at Flint, Mich.; at the Chevrolet plants 10,000 return to work on part-time, Jan. 27.

Jan. 6—United Automobile Workers' president demands impeachment of judges who granted injunction against "sit-ins."

Jan. 7—General Motors closes three subsidiary plants (Chevrolet), adding 20,000 to General Motor's idle workers. After interview with Governor Murphy of Michigan, the U.A.W. drops sole bargaining demand; on Jan. 12, the Governor mobilizes 1,200 militia at Flint, as John L. Lewis, head of the C.I.O., demands Congressional investigation of General Motors Corporation tactics, and on Jan. 22,

President Sloan charges Lewis with trying to dominate the motor industry illegally. The next day it is announced that fifty plants closed in twenty-five cities have produced 125,613 idle workers.

Feb. 10—Auto "sit-in" strike ends at Flint plants with both sides claiming victory, and the next day an agreement is signed by General Motors officials and the U.A.W. of America.

Feb. 17—United Mine Workers (soft-coal section) demand a 30-hour week, a $6 minimum daily wage, a fortnight vacation with pay, and a minimum of 200 work days per annum.

Feb. 23—A "sit-in" strike closes Douglas aircraft plant, Santa Monica, Calif. Two days later 343 strikers are evicted.

March 2—Agreement signed by Carnegie-Illinois Steel Corporation and the C.I.O. (Steel Workers' Organization).

March 7—Strikers at Lebanon, Pa. (Bethlehem Steel Corporation), demand recognition of C.I.O. as sole bargaining agency.

March 8—"Sit-in" strike at Chrysler plants, Detroit, closes plants, affecting 75,000 workers.

March 10—The C.I.O. head, John L. Lewis, extends organizing activities from steel and autos to textile and oil.

March 10—Pensions for 1,500,000 railway men is envisioned by agreement signed between companies and unions.

March 28—Contrary to the dictum of Lewis, head of C.I.O., William Green, president of the American Federation of Labor, which the C.I.O. is trying to undermine, declares "sit-in" strikes to be illegal and warns labor against making use of them.

April 2—A $85,000,000 wage rise affects 300,000 workers by agreement signed by soft coal operators and the United Mine Workers of America.

April 7—Farmers of Hershey, Penn., after losing over half a million gallons of milk daily, oust 500 "sit-in" strikers in local chocolate plant.

April 25—The "sit-in" strike, which closed Ford plant at Richmond, Calif., April 23, ends with employer's pledge not to discriminate against union.

May 14—Ford Motors institute propaganda against unionization of their workers "from the outside"; on May 26 workers at Detroit plant beat up C.I.O. trespasser organizers, and on June 5, begin to organize their own internal union. The company challenges the legality of the National Labor Relations Board, July 3. [See Dec. 23.]

June 13—John L. Lewis, C.I.O., orders strike in seventeen mines which furnish ore to Bethlehem Steel and Youngstown works. Miners strike and then, July 25, return to work at old wages.

Aug. 29—Ranks of A. F. of L. swelled by 1,000,000 in last year and a half, it is announced by President William Green, who, in a speech at Dallas, Texas, Sept. 6, charges the C.I.O. with a paradox: Inviting both communists' support and Fascist dictatorship. On Sept. 14 he discloses plan to organize newspaper workers with composing room and editorial departments as separate units.

Oct. 12—Lewis purposes to amalgamate his C.I.O. with Green's A. F. of L., but the latter rejects, and the next day demands that the Labor Board get rid of its C.I.O. members.

Oct. 14—Green is re-elected president of the A. F. of L., which the Labor Board, Oct. 19, upholds over the C.I.O.

Nov. 20—In Ohio ownership rights in property jeopardized by "sit-in" strikes will be protected by state troops, according to Governor Martin L. Davey.

Dec. 2—Green and Lewis meet for compromise negotiations, looking to alliance.

Dec. 13—The National Maritime Union, formed last May by secessionists from the International Seamen's Union, votes to affiliate with the C.I.O.

Dec. 23—The National Labor Relations Board finds the Ford Motor

Company guilty of having violated the National Labor Relations Act.

AVIATION

Jan. 19—Howard Hughes set a new transcontinental speed record by flying a Wasp-powered Hughes Special from Burbank, Calif., to Newark Airport, N.J., at the rate of 327.1 miles an hour. The distance, as scaled by the National Aeronautic Association, is 2,445 miles.

Feb. 10—Nine army bombers in command of Major J. K. McDuffie flew from Miami, Fla., to the Panama Canal Zone, setting a squadron record of 7 hours 55 minutes. The distance is estimated at 1,175.7 miles.

March 29—One of Germany's Lufthansa mail planes flew from Brazil to Berlin in two days, carrying 60,000 letters and 10,000 Easter cards, a record cargo for transatlantic planes.

May 6—Fire, started by a spark of static electricity, destroyed the airship *Hindenburg* as it was about to moor at Lakehurst, N.J. Thirty-five lives were lost.

May 22—Professor Otto J. Schmidt and Pilot M. V. Vodopyanoff alighted on the ice at the North Pole and set up the first weather observing station there.

June 22—Twelve flying boats in command of Lieutenant R. W. Morse arrived at Coco Solo, C.Z., setting a navy record for a mass flight over a distance of 3,085 miles. The flight was made in 27 hours 58 minutes.

July 2—Amelia Earhart disappeared in the Pacific on a flight around the world.

July 3—Pan American and Imperial Airways began transatlantic path-finding flights for commercial service.

July 15—Colonel Mikhail Gromov and two companions landed at San Jacinto, Calif., completing a non-stop flight from Moscow across the North Pole. They set a world distance record of 6,295.6 miles.

Aug. 2—Gwynne Johns claimed a world record for a "delayed" parachute descent. Over Salisbury Plain in England he "bailed out" at 22,400 feet and fell 18,000 feet before opening his 'chute.

Aug. 7—Herr Huth set a distance record for engineless planes by gliding 475 miles from Wasserkuppe to Berlin.

Sept. 21—Miss Hanna Reitsch set a world distance record for women glider pilots by soaring 219 miles from Wasserkuppe to Hamburg.

Oct. 26—Pilot Henri Guillaumet set a world distance record for seaplanes by flying the *Lieutenant de Vaisseau Paris* 3,425.3 miles from Port Lyautey, French Morocco, across the South Atlantic to Macieo, Brazil. He was in the air 34 hours and 28 minutes.

Nov. 11—Pilot Wurster set a new speed record for land planes at Augsburg, Germany, on a three-kilometer course at 379.1 miles an hour. He flew a Messerschmidt monoplane similar to those used by the German Air Force as pursuit planes.

Dec. 1—Transpacific mail and passenger service is extended from Manila, P.I., to Hong Kong, China.

Dec. 26—Pan American Clipper alights at Auckland, N.Z., on trail-blazing flight for additional Pacific extensions from Honolulu.

CRIME AND DISASTER

Jan. 20–Feb. 15—Floods in lower Ohio Valley cause an estimated death of over 100 and turn half a million people homeless with Cincinnati and Louisville partially submerged; Federal agencies including the Red Cross, mobilized on war basis, and the W.P.A. working for protection, relief and reconstruction.

Feb. 10–Mar. 10—Dust storms render the flora sites of Colorado, Kansas, Oklahoma and a large part of Texas non-productive, most of which are recovered by scientific irrigation and induced rainfalls by September.

Feb. 18—Gun explosion on battleship *Wyoming* kills six and injures ten.

Feb. 26—For peace-time espionage John S. Farnsworth is sentenced from four to eight years.

May 6—The *Hindenburg,* German dirigible, is destroyed on landing at Lakewood, N.J., with an ultimate loss of 35. On July 21 Department of Commerce investigators blame St. Elmo's fire.

July 25—Earthquakes kill 34 in Mexico.

Oct. 18—Palatial airliner crashes on Utah mountain with a loss of all on board—19.

Nov. 16—The Grand Ducal family of Hesse bei Rhein is practically wiped out by airplane disaster in Belgium.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

American Antiquarian Society, Worcester, Mass.

American Baptist Historical Society, Upland Avenue, Chester, Pa.

American Catholic Historical Association, Catholic University, Brookland Station, Washington, D.C.

American Historical Assn., 40 Independence Ave., Washington, D.C.

American Irish Historical Society, 132 East 16th St., New York City.

American Jewish Historical Society, Broadway at 122nd Street, New York City.

American Numismatic Society, 156th Street at Broadway, New York City.

American Scenic and Historic Preservation Society, 287 Convent Avenue, New York City.

American Society of Church History, 5757 University Ave., Chicago, Ill.

Canadian Historical Assn., Ottawa, Canada.

Freethinkers of America Inc., 317 East 34th Street, New York City. City.

Hispanic Society of America, 156th St., W. of Broadway, New York City.

Holland Society of New York, 90 West Street, New York City.

Huguenot Society of America, 2 West 45th Street, New York City.

Methodist Historical Society, 150 Fifth Ave., New York City.

Mississippi Valley Historical Assn., Cedar Rapids, Iowa.

New England Historical Genealogical Society, 9 Ashburton Place, Boston, Mass.

Presbyterian Historical Society, 520 Witherspoon Building, Philadelphia, Pa.

Proportional Representation League, 309 East 34th Street, New York City.

Society for the Preservation of New England Antiquities, 141 Cambridge St., Boston, Mass.

Steuben Society of America, 369 Lexington Ave., New York City.

Thomas Paine National Historical Assn., North Ave., New Rochelle, N.Y.

United States Catholic Historical Society, 346 Convent Ave., New York City.

Woodrow Wilson Foundation, 8 West 40th Street, New York City.

POLITICAL

League for Industrial Democracy, 112 E. 19th Street, New York City.

National League of Women Voters, 726 Jackson Place, Washington, D.C.

National Municipal League, 309 E. 34th Street, New York City.

Women's National Democratic Club Inc., Hotel Alamac, 71st Street and Broadway, New York City.

Women's National Republican Club, 3 West 51st Street, New York City.

DIVISION II

INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

THE UNITED STATES AND EUROPE

By William T. Stone

Vice-President, Foreign Policy Association

THE COURSE OF AMERICAN OPINION

During the course of 1937, a year marked by repeated international crises and unrelieved political tension throughout the world, American foreign policy veered away perceptibly from the dominant isolationist trend of the preceding two years, assuming a stronger position in defense of national rights and interests and moving cautiously toward closer co-operation with other democratic states. As Europe became more sharply divided, with rival blocs of the great powers struggling to draw reluctant small states into their orbits, the United States Government gave evidence of concern and apprehension over the growing disrespect for treaty obligations and expressed its strong condemnation of the use of force as an instrument of national policy. While American public opinion apparently continued to support the concept of "neutrality" and non-involvement in the turbulent affairs of Europe, the Roosevelt Administration sought persistently to combat the belief that America could find peace and security in a program of isolation or neutrality.

Events in the Far East as well as developments in Europe contributed to this trend. Following the outbreak of hostilities between Japan and China in July, Secretary of State Cordell Hull issued an important statement of principles applied to the world as a whole and addressed to some 60 governments. In the absence of any formal declaration of war, President Roosevelt declined to invoke the Neutrality Act adopted by Congress less than three months before, and ignored pressure for its application following the spread of large scale military operations in the area of Shanghai and the Yangtze River valley during the autumn and early winter. The "middle of the road" policy pursued by Secretary Hull in the Far East was officially interpreted as a course halfway between the extremes of isolation and collective action, the principles of which were held to be of universal application. While the President's call for "positive endeavors to preserve peace," voiced in his Chicago speech on Oct. 5, was not followed by "concerted action" to restrain Japan at the abortive Nine Power Treaty conference at Brussels, the Administration left no doubt of its desire to repudiate the "peace at any price" philosophy embodied in the neutrality legislation of the preceding years.

THE SPANISH CIVIL WAR

The Spanish Civil War had been in progress nearly six months when the year began, and the end was not yet in sight at the close of 1937.

The United States was not invited, and did not offer, to participate officially in the deliberations of the Non-Intervention Committee of 27 nations which continued its effort to localize the conflict on the Iberian Peninsula. Nor did the United States Government take part in the Nyon conference called by Great Britain and France in September to deal with acts of "piracy" by submarines of an undesignated nation against neutral shipping in the Mediterranean. Unofficially, however, the American State Department gave evidence of its purpose to support the embargo policy sponsored by the two European democracies and cautiously applied through the Non-Intervention Committee. Until December, 1936, the State Department used "moral suasion" to prevent American munitions concerns from shipping arms and ammunition to either side in Spain. As the Neutrality Act at that time contained no provision for placing an embargo on arms shipments to belligerents in civil war, the Department was without authority to refuse any application for an export license by a bona-fide American concern which sought to fill war orders in Spain. Early in January the Munitions Control Board was compelled to grant such a license for the export of airplanes and arms on the Spanish ship *Marcantabrio,* destined for Loyalist Spain. In an effort to stop the shipment and to curtail future trade in arms with Spain, President Roosevelt on Jan. 6, 1937 asked and obtained from Congress authority to impose an embargo on "arms, ammunition and implements of war" applying equally to the Spanish Government and the Insurgents. This action, which marked a departure from the previous practice of the United States in situations involving civil strife, was followed by State Department regulations curtailing passports for travel by American citizens in Spain.

With the passage of the "permanent" Neutrality Act on May 1, 1937, the President's authority to extend embargoes to countries engaged in "civil strife" was renewed and generalized, and the Secretary of State was empowered to forbid the raising of funds in the United States for any belligerent government, except funds for medical or relief purposes. On the same day that the act became law, the President issued a proclamation declaring that a state of civil strife unhappily existed in Spain "under such conditions that the export" of implements of war "would threaten and endanger the peace of the United States," and continuing the arms embargo of Jan. 8. Despite the fairly obvious fact that several foreign powers, notably Germany and Italy, had, by a policy of intervention, committed acts of war in Spain, the President refrained from making the arms embargo applicable to them. This was interpreted in some quarters as further evidence that the Administration did not desire to go beyond the judgments registered by the Non-Intervention Committee in London. The efforts of the President and the State Department to enforce neutrality did not prevent American opinion from becoming increasingly vocal and divided over the conflict. By the end of the year large sums had been collected in the United States for the relief of participants on both sides, and considerable numbers of Americans were fighting—under Loyalist banners—on Spanish battlefields.

NEUTRALITY ACT OF MAY 1, 1937

While the fervid support of neutrality as an escape from the dangers of involvement in foreign wars had somewhat subsided by the early months of 1937, sentiment in Congress and the country was still strongly in favor of some permanent legislation to replace the temporary act expiring on May 1, 1937. The conflict persisted between advocates of mandatory legislation on the one hand and Presidential discretion on the other, although the demand for outright embargoes had been weakened by a growing awareness of the economic price of this proposal and its effect on the leading European democracies. Thus the paramount is-

sue in the debate centered on the "cash and carry" plan, under which trade with belligerents might continue in wartime, provided the belligerents transported American goods in their own vessels and paid for them in cash.

While the majority of Congress favored cash-and-carry as an experiment, they were unwilling to make its application automatic on the outbreak of any war—apparently in the belief that many wars would not be serious enough to justify the imposition of severe restrictions on the American merchant marine and foreign trade generally. Administration leaders, supported by the majority, favored giving the President discretion in these matters. The mandatory school, which included the senators who had taken the lead in the Senate Munitions Inquiry, contended, however, that if the President enjoyed discretion regarding cash-and-carry, he would be virtually granted power to declare war.

On March 3, 1937 the Senate, by a vote of 63 to 6, passed the resolution introduced by Senator Pittman, chairman of the Senate Committee. On March 18 the House passed the bill introduced by Judge McReynolds, chairman of the House Committee, by a vote of 376 to 12. Differing in a number of respects, the House and Senate bills were referred to conference immediately after their passage, and it was only on April 28 that a compromise measure was reported back and adopted the next day. The measure represented a partial victory for the House discretionary view; but Congress had so many misgivings as to the wisdom of the cash-and-carry principle that it fixed at two years the life of this provision.

In its final form the new Neutrality Act extended the automatic embargoes on arms and ammunition and loans and credits to belligerents, as incorporated in the earlier law. The provision for prohibition of travel by American citizens on belligerent vessels, except at their own risk, was made mandatory, and to this was added an automatic ban on transport by American vessels of implements of war to belligerents, arming of American merchantmen, and the solicitation of war contributions. The President was, in addition, given discretion to invoke the "cash-and-carry" provisions of the act, forbid use of American ports to foreign submarines and armed merchant ships except in accordance with regulations or as a basis of supply for belligerent warships. Concerning the efficacy of the embargo measures observers were skeptical. They pointed out that there was nothing in the act to prevent American industries from evading the arms embargo by establishing branch munitions factories abroad, or foreign nations from financing a wartime trade by unloading securities held by their nationals in the United States.

NEUTRALITY AND THE FAR EASTERN CONFLICT

When hostilities broke out between China and Japan on July 7, President Roosevelt failed to invoke the Neutrality Act, despite strong pressure from the neutrality bloc in Congress. In the absence of a declaration of war or the severance of diplomatic relations by either of the belligerents, the President appeared to be legally within his rights in withholding a proclamation that a state of war existed, although there were many who asserted that his failure to invoke the act was tantamount to nullification. The President's reluctance to apply the act was attributed to a desire not to aggravate the controversy between China and Japan or to reduce the influence of the United States for peace.

Increasingly concerned over the course of world events and the growing intensity of the Sino-Japanese conflict, Secretary Hull on July 16 issued a statement, addressed to some 60 governments, upholding the fundamental principles of international law and respect for treaty obligations. The Secretary of State declared American foreign policy to be based upon a policy of peace, above all, through non-use of force

in pursuit of policy and through noninterference in the internal affairs of others. The United States believed in adjustment of international problems by peaceful negotiation and processes of accommodation, and was ready to take steps toward lowering excessive barriers in international trade, adoption of the principle of equality of commercial opportunity and treatment, and moves which would make for economic security and stability. American policy was based as well, said Secretary Hull, on faithful observance of international agreements, the revitalizing of international law, limitation and reduction of armaments, and no alliance with single nations but cooperative effort with any and all for achievement of the program outlined. This statement of moral principles was acknowledged with varying degrees of enthusiasm by 50 governments, including those of Japan, Italy and Germany.

A further assertion that American efforts to keep the peace meant neither "complete isolation" nor "ill-advised and unnecessary intervention" was made by Secretary Hull before the National Peace Conference in New York City on Sept. 16. A few days later, before American Legion Commanders in New York City, Mr. Hull termed the course America must follow "enlightened nationalism." "One extreme (of policy) would be utter isolation, which would mean closing our eyes to the realities of the world today . . . ; the other extreme would be a kind of internationalism, which would mean abdicating our independence of judgment, abandoning our traditional policy of nonentanglement, and being drawn into the rivalries and disputes of other nations. . . . neither of these extremes offers us a solution. We must draw the best from each and follow a middle course."

THE PRESIDENT'S CHICAGO SPEECH

The sharpest expression of the Roosevelt Administration's readiness to pursue a positive policy came at Chicago on Oct. 5, when the President delivered a speech interpreted as marking a clear departure from the policy of isolation and a direct repudiation of the philosophy of the Neutrality Act. Manifestly directed not only at Japan's policy in China, but also at actual or potential treaty-breakers in Europe, the speech created a sensation both at home and abroad. "The people of the United States," the President declared, "must give thought to the rest of the world. . . . The present reign of terror has now reached a stage where the very foundations of civilization are seriously threatened. . . ." "If our civilization is to be preserved," he added, "the peace-loving nations must make a concerted effort in opposition to those ignorings of humane instincts which today are creating a state of international anarchy and instability from which there is no escape through mere isolation or neutrality." When an epidemic of physical disease starts, the community joins in a "quarantine" of the patient. For the very reason that "America hates war, . . . there must be positive endeavors to preserve peace."

THE BRUSSELS CONFERENCE

Encouraged by President Roosevelt's speech, the Far Eastern Advisory Committee of the League of Nations the same day declared that Japan had violated its treaty obligations by invading China. The committee urged the Assembly to invite League members who were parties to the Nine Power Treaty to initiate the "full and frank communication" and consultation which Article 7 of that Treaty provided. On Oct. 6 this proposal was adopted in the form of a resolution by the League Assembly, whose president immediately invited the 17 League states which had signed the Nine Power Treaty to initiate consultations. The American State Department immediately issued a statement declaring itself "in general accord" with the League report, and declaring that "the Government of the United States has been forced to the conclusion that the action

of Japan in China is contrary to the provisions" of the Nine Power Treaty and the Kellogg-Briand Pact.

When the Belgian Government, at the request of the British Government, issued invitations to the signatories of the Nine Power Treaty for a conference to convene at Brussels, the United States promptly accepted. In his note of Oct. 16 however, Secretary Hull revealed as clearly as the language of diplomacy permits, that the Roosevelt Administration—despite the strong words at Chicago—was not prepared to join in concerted economic action against Japan, but that it would seek to settle the conflict by mediation rather than by coercion of the aggressor.

When the representatives of 19 states finally convened at Brussels on Nov. 3, it was quite apparent that none of the great powers, including the United States, was prepared to take that "concerted action" for which the President had called on Oct. 5. After Japan had formally declined two invitations to participate in the Brussels deliberations—on the ground that the powers had condemned Japan in advance—the conference could do little more than issue another declaration of moral principles. In its final declaration, issued on Nov. 24, the principles of the Nine Power Treaty were "strongly reaffirmed," and "prompt suspension of hostilities" were declared to be "in the best interests not only of China and Japan but of all nations." "The Conference is convinced that force can provide no just and lasting solution for disputes between nations." It "strongly urges that hostilities be suspended," that "resort be had to peaceful processes," and that "no possible step to bring about . . . a just settlement of the conflict should be overlooked or omitted."

CO-OPERATION WITH THE LEAGUE OF NATIONS

The United States, although not a member of the League, continued during 1937 to co-operate with the League in political and administrative activities. An American observer, Leland Harrison, Minister to Switzerland, sat in an informal capacity on the Advisory Committee set up by the Assembly to consider Japanese aerial bombardment of open towns in China. A representative of the United States served in an advisory capacity also with the Council Committee for Technical Collaboration between the League of Nations and China. American delegates continued to work with the Advisory Committee on Traffic in Opium, the Advisory Committee on Social Questions, the Temporary Committee for Assistance to Indigent Foreigners, and on a dozen separate League commissions American members continued to co-operate.

RECIPROCAL TRADE AGREEMENST

To the straitened political situation was added a business recession in the United States which by the close of the year had wiped out most of the gains toward economic recovery registered during 1936. Domestic production went into a severe decline and unemployment increased greatly. In contrast, however, foreign trade during 1937 continued its steady climb, exports from the United States for the first ten months totalling $2,669,654,000 as compared with $1,999,813,000 from the 1936 mark of $1,981,031,000.

How much the Roosevelt-Hull program for lowering trade barriers had contributed to these changes was impossible to determine in the absence of detailed statistics. The tendency evidenced in 1936, however, for exports to countries with which trade agreements were in operation to respond as a unit over exports to all other countries, continued in 1937. United States exports to trade-agreement countries during the first half of 1937 increased by 41 per cent over January to June of 1936, as against an increase of 29 per cent for American exports to all other countries. Imports from trade-agreement countries failed to show similar gains during 1937 because of an abnormal demand for such raw commodities as rubber, tin, and wool, obtainable only from countries with which no

trade agreements had yet been enacted. Imports from non-trade-agreement countries increased by 52 per cent over the first half of last year as against a gain in imports from trade-agreement countries of 34 per cent.

Although the 16 trade agreements in effect at the end of 1937—two had been added during the year—accounted for over a third of exports and imports into the United States, the real test of the Roosevelt-Hull program still lay in whether it could breach the tariff walls of the major European powers. With negotiations for a trade agreement with Great Britain in full swing, formal announcement of intention to negotiate being expected momentarily as the year drew to a close, prospects for this action were bright. The political and economic implications of such a pact were as great as the vast new area of trade which the final formula for negotiation promised to open to the United States. Prime Minister Chamberlain's decision not only to reduce the high tariff wall with which the Ottawa agreements had surrounded the British Commonwealth, but also to grant the Dominions "compensating advantages" in return for concessions made to the United States at Dominion expense made it possible for the Dominions to approach Washington on a basis of full equality and to bargain separately for trade advantages. Signing of the agreement was expected by the spring of 1938, as well as extension of the agreement with Canada. Negotiations for an agreement with Czechoslovakia were meeting the opposition of American manufacting interests but, as with the contemplated pact with England, it was not expected that the agreements would be blocked. A first breach into the Central European bloc of "quota" nations was made in December with the State Department's signature of a temporary arrangement with Italy for a non-discriminatory most-favored-nation basis for trade. Whether this meant, for Italy and other nations, a departure from the policy of economic autarchy and further victories for Secretary Hull's policies it was too early to tell.

On Feb. 12, 1937, Congress extended the Trade Agreements Act until June 12, 1940, giving the President power to conclude trade agreements until that time. As the year drew to a close, observers reflected that President Roosevelt's attempt to assert a positive political program for democracies—conceived at Chicago and stopped short at Brussels—might yet be consolidated into a broad economic program headed by a trade agreement between the two great democracies.

UNITED STATES RELATIONS WITH LATIN AMERICA

By Graham Stuart

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NEW DIVISION OF THE AMERICAN REPUBLICS IN THE STATE DEPARTMENT

During the year 1937 an important change in the United States administration of Latin American affairs occurred with the establishment of a new division in the Department of State to be known as the Division of the American Republics, having jurisdiction over all relations between the United States and the 20 Latin American Republics and taking over the work formerly performed by the Division of Latin American Affairs and the Division of Mexican Affairs.

The Division of American Republics, as it is now constituted, is headed by Laurence Duggan as chief with about a dozen officers assisting him, a considerable number of whom are foreign service officers who have had experience in

the Latin American countries. A new policy of bringing back officers from the foreign service is gradually being worked out so that there will always be men in the Division thoroughly familiar with conditions in related Latin American countries through recent service in those areas. The most important dispatches and telegrams from the diplomatic officers in the field are reported from the Division directly to Under Secretary of State Welles, an outstanding authority on Latin American affairs. The Division also co-operates in working out the reciprocity trade agreements which have been arranged with the Latin American countries.

FURTHERING THE GOOD NEIGHBOR POLICY

It will be remembered that the Buenos Aires Conference which met in December, 1936 agreed upon ten treaties and a protocol and 62 resolutions and recommendations. On June 29, 1937 the United States Senate approved all of the treaties and conventions except the one pertaining to interchange of publications. The agreements ratified included the two treaties providing for good offices and mediation, and the prevention of controversies; the two conventions for the co-ordination and extension of existing treaties between American states, and for the maintenance, preservation and re-establishment of peace; and the very important protocol relative to non-intervention. By its prompt action the United States took the lead in an effective policy for the maintenance of peace in the Americas.

The Hull reciprocity trade agreement program was renewed for another three year period in 1937 and two more such agreements with Latin American states became effective in the course of the year—that with El Salvador, May 31, and the one with Costa Rica, Aug. 2. Announcement was made during the year that the negotiation of agreements with Ecuador and Venezuela were contemplated. At the present time half of the Latin American countries are bound up in reciprocity commercial agreements with the United States, a situation which has not only proved itself to be economically advantageous to all concerned but has also tended towards more friendly political relations.

For a number of years the Pan American Union has been utilizing the radio with the co-operation of the broadcasting companies to disseminate to Latin America concerts presented at the Union. Also weekly mimeographed radio letters devoted to subjects of Pan American interest have been mailed to radio stations for transmission over local facilities. On Nov. 1 the Department of the Interior began a series of weekly broadcasts to foster good-will in the Americas by picturing dramatically the history of Latin America as it has been developed around the lives of its great leaders, statesmen and writers. A few of the titles will indicate the picturesque character of the broadcasts: "Conquerors of a New World," "The Empire of the Sun," "The Magnificent Mayans," "The Damon and Pythias of the Revolutions," and "The Christ of the Andes."

UNITED STATES INTERESTS IN MEXICO

A serious threat to friendly relations between the United States and Mexico arose in 1937 when the Mexican Government once again threatened to confiscate foreign concessions and holdings in order to carry out the party's program for the redistribution of large estates and for the nationalization of the oil industry. It was estimated that where formerly American holdings were worth more than $2,000,000,000 they are now worth less than $1,000,000,000, and President Lazaro Cardenas is carrying out a program which is rapidly reducing what is left.

The seizure of land owned by the Colorado River Company to be divided among Mexican peasants was approved by President Cardenas in spite of vigorous protests on the part of the American embassy. The Jenkins plantation which was expropriated by the Mexican Government

contained over 270,000 acres valued at over $4,000,000,000. Although payment seemed to be contemplated it was a serious question as to whether compensation in agrarian bonds might not be regarded as unreasonable sacrifice to the point of illegal confiscation.

Another attack upon American interests came through the attempt of the Mexican Government to build up a new national petroleum administration. Through strikes and high wages authorized by the Government Labor Board and through increased taxes the foreign oil companies have been threatened with a loss of their investment. The situation became so serious that, in October, the State Department took the unprecedented step of calling a conference of all the American consuls stationed in Mexico to meet at the Embassy in Mexico City and confer with State Department officials including the Chief of the newly organized Division of American Republics. Invited to speak at this gathering, Mexican Undersecretary of Foreign Relations Beteta assured his listeners that the Mexican Government was "studying the manner of effecting speedy compensation for such expropriations as the revolutionary program demands —confiscation, that is expropriation without indemnification was not contemplated."

However, the settlement of November with the British controlled Mexican Eagle Oil Company raising royalties up to 35 per cent was regarded as a violation of the tax agreement made by Morrow and Calles in 1928, guaranteeing the rights of foreign oil companies operating in Mexico. Additional evidence was furnished when the Mexican Government intimated that the Standard Oil Company of California might receive back its subleased concession of 350,000 acres which had been withdrawn on Nov. 4 if it would agree to similar royalties. Instead on Nov. 24 suits were instituted in the Federal District Court in Mexico City asking injunctions against the nationalization of these 350,000 acres, and it was intimated that the Standard Oil Company of California was considering a formal appeal to the State Department for protection. The attitude of the State Department was shown by a statement made by Undersecretary Sumner Welles on Dec. 6 to the effect that "should legitimately acquired properties of aliens residing in a foreign country be expropriated for purposes of ordinary public welfare of that country such aliens are entitled to equitable compensation therefore."

As an evidence of its desire to pursue the policy of the good neighbor, on April 13 the United States agreed to the abrogation of Article VIII of the Gadsden Treaty of 1853 which authorized the construction of a plank road or railroad across the Isthmus of Tehuantepec and the transport of mail and troops upon such facilities. Although such a project had never been carried out and was now obsolete, the Mexican Government resented this servitude imposed upon its authority. Another friendly gesture was the exchange of ratifications between the United States and Mexico on March 15, 1937 of a convention protecting those species of migratory birds and mammals common to the two countries. The provisions follow the regulations which have been in force between the United States and Canada for some 20 years.

HAITI AND THE DOMINICAN REPUBLIC

The Caribbean area is particularly within the United States sphere of influence, and in the case of the Dominican Republic the 1924 convention still gives the United States specific supervision over the financial methods of the government until existing loans shall have been paid. During the régime of General Trujillo —a dictatorship more absolute than Mussolini or Hitler could even hope to achieve—the United States has contented itself with keeping a watchful eye over amortization procedure and with sponsoring the organization of the Foreign Boldholders' Protective Council, Inc.

One other source of worry to the United States has been the reports constantly arriving at the Department of State of the killing by Dominican soldiers of Haitian squatters who have crossed over and established themselves in Dominican territory. In October, 1937 the reports became more specific and early in November the Haitian Foreign Secretary who happened to be in the United States made a statement that more than 1,000 Haitian men, women and children had recently been massacred by Dominican troops seeking to eject the settlers from Dominican territory. The Haitian legation subsequently issued a similar statement, and this was followed by a request by the government of Haiti that the United States, Cuba, and Mexico use their good offices to settle the differences between the two Republics.

The Dominican President General Trujillo was disinclined to accept such action and instead sent special envoys to Washington, Mexico City and Havana in an apparent effort to postpone conciliation measures. He also failed to appoint the members to a mixed Haitian-Dominican Commission which was set up to investigate the affair. Inasmuch as both governments are parties to the Inter-American Conciliation Treaty of 1929 machinery is available for a peaceful settlement of the dispute. If this fails it would seem essential that the United States advise with its Latin American neighbors as to what action should be taken to prevent another undeclared war from breaking out.

THE HONDURAN-NICARAGUAN BOUNDARY DISPUTE

The present dispute between Honduras and Nicaragua as to their boundaries dates back to an arbitral award made by the King of Spain in 1906—a settlement accepted by Honduras but not by Nicaragua. In 1932 the two powers signed a protocol agreeing to place monuments along the line but again Nicaragua failed to take action. The dispute flared up again when in September, 1937 the Nicaraguan Government issued a series of air-mail stamps containing a map of Nicaragua showing the area in controversy as Nicaraguan. Honduras protested vehemently and the situation became very acute.

Since both Republics had signed the various treaties and conventions of the Buenos Aires Conference for the Maintenance of Peace, the United States expressed the hope that the controversy could be settled by agreement between the two countries. On Oct. 20 the United States, in association with the governments of Costa Rica and Venezuela, tendered its good offices to the governments of Honduras and Nicaragua. In the offer it was proposed that if both governments accepted, the three governments were willing not only to offer suggestions for the alleviation of the present tension but also to propose means of reaching a definite settlement of the controversy. At the same time the United States notified all the other Latin American governments that this tender of good offices was being made jointly in accordance with the principles unanimously subscribed to at the Buenos Aires Conference.

The tender of good offices quickly bore fruit. On Dec. 10 a pact of reciprocal agreement was signed in San José, Costa Rica, whereby Nicaragua and Honduras agreed to withdraw their troops from the frontier, refrain from further military preparations or purchase of arms, and to settle their differences by peaceful means in accordance with the Convention of 1929. Dr. Frank P. Corrigan, U. S. Minister to Panama, who served as chairman of the conciliation commission was given credit for the prompt and successful culmination of the commission's efforts.

THE SANITARY CONVENTION WITH ARGENTINA

One of the acute causes of friction between the United States and the Argentine Republic is the failure of the United States to ratify the Sanitary Convention with Ar-

gentina which would remedy an unfair situation which has developed as a result of one of the provisions of the Hawley-Smoot Tariff Act of 1930. A resolution passed by the Illinois State Veterinary Medical Association, opposing the ratification of the Convention on the ground that it would involve danger of the introduction of hoof-and-mouth disease into this country, afforded Secretary of State Hull an excellent opportunity to clarify the issue.

In a letter to the Secretary of the Association dated May 3, 1937, Secretary Hull pointed out that the Hawley-Smoot Act did not add to existing quarantine safeguards of the American livestock industry but what it did was under the guise of sanitary regulation to subject entire countries to sanitary embargoes even though they might contain well defined areas where there was no infection or exposure. "The real object was not sanitary protection—it was Smoot-Hawleyism carried to its logical extreme of embargo protectionism." Secretary Hull then pointed out the manifest injustice to Argentina of the provision since Patagonia, the far southern section of Argentina, had never in its history been subject to the hoof-and-mouth disease. As a result the application of an embargo to the whole of Argentina had stigmatized the entire livestock industry of the country in a manner prejudicial to Argentina's large meat export trade to Europe. The Hawley-Smoot Act was also very prejudicial to the United States export trade to Argentina since it had dropped from over $210,000,000 in 1929 to about $57,000,000 in 1936.

The treaty affirms the right of either country to prohibit importation of animal or plant products from any parts of the other country which are affected with or exposed to plant or animal disease. But it denies to the importing country the right to prohibit importation from areas free from disease or exposure simply because such disease exists in other parts. It merely restores to the Department of Agriculture the discretionary authority which it formerly possessed.

Secretary Hull also noted the danger to our own export trade if other nations should follow our present practice. In fact when California suffered from the disease in 1924 and in 1929 we objected strenuously when New Zealand and the United Kingdom put an embargo upon livestock and grains from the rest of the United States. In conclusion he declared that the opposition was wholly unwarranted and unfair and imperiled the great benefits which our policy of trade improvement was achieving for the whole of the United States. In spite of his efforts the Convention remained unapproved by the Senate at the end of the year.

THE UNITED STATES AND BRAZIL

The United States of Brazil has for many years been one of the most friendly of South American powers to the United States of America. One of the reasons is the large purchases of Brazilian coffee made annually by the United States. As evidence of her appreciation Brazil was the first of the South American states to sign a reciprocity tariff agreement with the United States. As an evidence of our cordial attitude for a number of years, the United States has sent a naval mission to Brazil to aid in the instruction of Brazilian naval officers. Hence it was only natural that when Brazil wished to secure temporarily several United States destroyers already out of commission for training purpose, the United States was glad to oblige. But although Brazil's neighbors did not object to the borrowing of United States naval officers for instruction purposes they opposed very vehemently the borrowing of naval vessels. So vocal were the protests that on Aug. 20, 1937 the United States and Brazil issued a joint statement declaring that the proposed plan was in entire harmony with the policy welcomed in many previous instances by the governments of other American republics of lending officers to them for instruction purposes or of receiv-

ing their officers for training in the naval vessels of the United States in American waters. And they regretted "that a question of such limited importance should even for a few days be allowed to divert attention from the high ideals and broad program which the 'good neighbor' policy comprises."

It was the turn of the United States to worry when on Nov. 10 President Getulio Vargas promulgated a new Constitution setting up a centralized corporative state which dissolved all existing legislative bodies, Federal and state. By the provisions of the Constitution of 1934, the presidential term was fixed at four years with a prohibition against an immediate second term. The new constitution increased the term to six years and declared the President to be the supreme authority of the state. Although the new government seemed quite reminiscent of the Italian model, Sumner Welles, in an address made Dec. 6, declared that the traditional friendship between the people of Brazil and the United States was not impaired by misinterpretations placed upon the Vargas coup d'état. He recalled that it had been unanimously agreed upon at the Buenos Aires Conference that no state should interfere with the internal affairs of another state.

UNITED STATES RELATIONS IN THE ORIENT AND NEAR EAST

By Albert Howe Lybyer

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THE FAR EAST: FIRST SIX MONTHS

The march of events in the Far East during the first half of 1937 was of a piece with that of the previous two or three years. The Japanese were occupied at home with the continuing struggle between the partisans of the active use of force in China and those who favored peaceful pressure. The leaders of military and naval policies and the munitions makers, more or less supported by laboring and agricultural interests, were thus locking horns with the party organizations, backed by other big business. Efforts to increase military and naval appropriations were hampered by a difficult international economic outlook. In May and June conditions indicated procedure by peace and conciliation.

In China the half-year was marked by a rising tide of confidence that the country would soon attain complete unity, and would become strong enough not merely to hold off an attack from Japan, but to defeat her, and recover control of the North. Following the kidnapping of Generalissimo Chiang Kai-Shek in December, 1936, and his release, arrangements were made by which the so-called Communist armies in Northwest China were gradually brought into the national unity. Progress continued in governmental organization and in the building of roads and other public improvements. Friends of China were strongly of opinion that the confusion which followed the Revolution of 1911 had finally been overcome, and that now the country had before it a hopeful prospect of modernization and prosperity.

Russia maintained efforts to strengthen her economic and military position in the Far East. Work went on toward double-tracking older railway lines, and completing the new line farther north. Frequently reports came of strengthening garrisons, tightening defenses, and providing Vladivostok with more and better aeroplanes. Defensive and progressive activities continued in Tanna-Tuva, Outer Mongolia, and Chinese Turkestan.

The British continued enlarging the new naval base at Singapore, and strengthening the defenses at Hong-

kong; they negotiated with Japan over Chinese affairs. The Dutch took thought for measures of defense of their far-flung island empire: they could provide air service and some submarines, but for a powerful navy they must rely upon the British, whose interest it is to maintain Dutch ownership in the island world as a buffer against possible Japanese advances upon Australia and New Zealand. Sentiment in the Philippine Islands appeared to be moving toward the retention of at least a defensive relationship with the United States. Siam was more and more receptive to Japanese aid and advice in economic and military affairs.

JAPAN AND CHINA: THE UNDECLARED WAR

The Japanese group favoring forceful intervention on the Asiatic continent, which may be called for short the Japanese army, took the bit into its teeth about the first of July. Its action came as a distinct surprise to most of the world. How far the plot was known in Japan cannot at present be estimated: some deny all premeditation, claiming that the "incident" came up unexpectedly. The probabilities indicate that the Japanese army first tried out the Russian disposal to fight by provoking a small incident among the islands of the Amur River late in June. The Russians, absorbed in completing their second Five Year Plan and distracted by the series of trials of officials which continued throughout the year, gave evidence of aversion to war, and yielded. England, France, Germany, and Italy, while increasingly interested in Far Eastern politics and trade, were watching each other intently in Europe. The United States was evidently strongly opposed to any warlike action, and was under pressure by isolationist groups, some of which advocated complete withdrawal of military and even of business interests from the Asiatic continent and islands. It appears then that the Japanese army gambled on being left to fight China alone, and won their gamble.

The spark of war was struck off by an encounter near the Marco Polo Bridge, a few miles west of Peking on July 7 between a detachment of Japanese soldiers, ostensibly engaged in summer manoeuvres, and a group of Chinese guards. The Japanese war machine moved into action at once, and took "certain measures" toward occupying cities and controlling communications in the North, while negotiations went on toward "settling" the incident without enlarged conflict. A month later, two Japanese officers were killed by Chinese guards when the former tried to enter the Chinese aerodrome south of Shanghai; the suggestion has been made that these men voluntarily sacrificed their lives on behalf of the Japanese army in order to start action in central China. However this may be, first the Japanese navy, and then the army came into action at Shanghai. These small encounters grew rapidly into a major war which progressively employed all the armed forces of China and Japan, and which threatened to bring in Russia, England, and the United States. Hundreds of thousands of men came under arms; tens of thousands of square miles of territory were fought over; hundreds of millions of dollars worth of property were destroyed in the fighting or by the retreating Chinese; many thousands of soldiers and sailors of the two countries fell fighting or were executed with an appalling lack of mercy; uncounted numbers of Chinese civilians were slain, many of them with apparent deliberation; and a score of illegal major injuries were done to the property and persons of non-combatant nations. Yet neither side took the formal step of recognizing that war existed, nor did any third power officially use the word "war." The Japanese army regarded it all as an "incident," while the rest of the world considered it a "conflict." Diplomatic relations were not broken between China and Japan.

JAPANESE INTERNAL AFFAIRS: FIRST HALF OF 1937

During all of 1936 and the first half of 1937 the Japanese army en-

deavored, through the manipulation of internal politics, to obtain control of the civil government of Japan. *The Manchester Guardian* said, on Jan. 5, 1937: "The struggle between the pro-fascist militarists and the liberal capitalistic group must now be fought to a finish, and one or the other decisively defeated." In the background was an increasingly difficult economic situation, due to the fact that Japanese trade the world over had expanded tremendously during the depression; that the manufacture, from cheap raw materials, largely imported, by low paid labor, of products sold at depressed prices in all lands; and that, with steady recovery, other countries raised the price of raw materials and protected their own labor by quotas, high tariffs, and other restrictions. Many Japanese farmers and workers were being forced below the level of comfort, and almost of existence. The increase of imports required the depletion of Japan's comparatively small stock of gold. Most of the gold was exchanged for oil, iron, and other materials useful in war, provided by American citizens. Japan's denunciation of the naval treaties suggested rapid increase of sea armament, and her ambitious continental policy demanded military preparation to the limit of physical possibility.

The Diet met on Jan. 21, 1937. The Government placed before it the largest budget ever known in Japan: in a total of 3,000,000,000 yen, or about $900,000,000, almost half was assigned to the Army and Navy. The struggle began promptly in which the Cabinet with the Army was against the Diet with the Navy. The Cabinet resigned, and on Feb. 2, a new Cabinet came into power under General Hayashi as Premier. He reassured the world as regards a moderate foreign policy, and the struggle continued. The Army desired credits to continue active operations on the Continent, relief for Japanese agriculture, and a government reorganization looking toward totalitarian simplicity. Failing to agree, the Diet was dissolved on March 3, and a new election was ordered for April 30.

On March 8, Foreign Minister Sato made a surprisingly peaceful speech, in which he favored "better economic and cultural relations with China," and in effect conceded the equality of China with Japan. Foreign observers warned that the Army extremists might at any time step in and force Japan to the policy of the mailed fist. In the electoral campaign the Premier organized a new party with a distinctly Fascist outlook, but did not exert vigorous influence. In the middle of April a delegation of 15 important industrialists, which had visited Shanghai and Nanking, returned unsuccessful, because the Chinese Government refused new trade agreements as long as the Japanese army was ruling a considerable fraction of China.

The election resulted in a smashing victory of the old parties and defeat for the Cabinet; only 15 per cent of the new lower House was for the Government. Nevertheless, the Premier endeavored to maintain his place. But after struggling through the entire month of May, he resigned, and on June 4 Prince Konoe took office, to remain Premier until the end of 1937. His Cabinet was a compromise, containing representatives of the parties as well as of the Japanese army. The Army group brought forward a six-year industrial plan, which was intended by the end of the time to triple production and which involved a total military and naval expenditure of 11,000,000,000 yen. This discussion was disrupted by the outbreak of the undeclared war. The selection of Hirota for Foreign Minister instead of Sato suggested a return toward the more rapid policy of the subjugation of China.

CHINA: FIRST HALF OF 1937

Essential links in the chain of events which led to the catastrophe beginning July 7 may be seen in connection with Chinese communism. General Chiang Kai-Shek practised his troops for several years

with attacks upon the Chinese communist armies. With heavy loss of life on both sides he reduced the power of these "Reds," pursuing them from the central south to the far west of China proper, after which their survivors established themselves in the northwest, where it was possible to receive help from Russia. As a matter of fact the Russians paid little attention to them, not recognizing ideological kinship with their combination of banditry and reduction of inequalities in property owning. Edgar Snow found the "Reds" to be a "competent and effective Society, intelligently directed, relatively advanced, obviously sincere." Japan persistently demanded that the Chinese Government co-operate with her in suppressing the Chinese communists. The agreement of Japan and Germany in November, 1936, against communism was a determining event. Perhaps it led directly to the capture of Chiang Kai-Shek at Sian in December, which resulted in a change of his mental attitude toward the communists. The subsequent gradual amalgamation of the "Reds" with the Nationalists was perhaps another determining factor in the decision of the Japanese army to take action; the last thing, certainly, that it desired was a strong and unified China, disposed to co-operate with Russia in maintaining the existing rights of both on the Asiatic continent.

In January war threatened to reopen between Nanking and Sian, but in February an agreement was reached. Both groups had been thoroughly aroused against Japan. A Chinese in Shanghai said that "feeling in favor of war resistance has arisen to such a high pitch that the least provocation would now arouse the nations to arms."

Another Chinese predicted that a victorious Japan would not be absorbed in China as were the Mongols and Manchus. He said that Japan was ruining North China by encouragement of ignorance, poverty, and degeneration. He predicted that victorious Japan would in all China destroy literature and books, rewrite history, and close colleges and universities.

Discussion proceeded in favor of a democratic constitution, but without the recognition of a communist party. A constitutional Assembly of 1,400 was to meet Nov. 12. Chiang, with some 300,000 fighting men, was still the most important personal force. So far as the communists had influence, they favored a speedy war with Japan, believing that even though Japan might occupy half of China, the operation would ultimately ruin her.

In May a process of rapprochement began between England and Japan in regard to China. The Japanese Government was willing apparently to agree to naval limitation and postponement of recognition of Manchukuo; in a firm agreement with Britain, Japan would be allowed to reorganize North China, without annexing any territory, while Britain might have central and southern China as a sphere of influence. The two Powers, with France and America, might advance a large loan to China. The subsequent triumph of the Japanese army completely stopped this plan of an Anglo-Japanese partition of China.

It will be observed that neither Japan nor England appear to have been bearing in mind the Nine-Power Treaty principles which looked toward the territorial and administrative integrity and the complete independence of China. Possibly outward conformity with this treaty would have been claimed in order to obtain money from the United States for financing the proposed concealed partition.

THE COURSE OF THE UNDECLARED WAR

Although negotiations for settlement began immediately after the incident at the Marco Polo Bridge, and continued actively for some weeks, both governments from the outset made every effort to mobilize forces and begin operations of actual war. The Japanese brought down troops and ammunition from Manchukuo by train and from the home-

land by ship. The Chinese brought up troops by rail and on foot to strategic points. Both sides apparently acted in accordance with preconceived plans. The first Japanese aim was shown by events to include obtaining control of the principle points in the five northern provinces, particularly the capital cities, and of the railways and roads between. The initial operations were mainly through Shanhaikwan, Tientsin, and Peiping, with a collateral thrust from Manchuria westward through Inner Mongolia, toward the capitals of Chahar and Suiyuan. The Chinese threw their armies in the way of the advancing Japanese, making special efforts to hold mountain passes and river crossings. In the Nankow Pass, northwest of Peiping, the Chinese forces held out for a fortnight, but were dislodged through attacks from the rear. Thus the Japanese prepared the way for setting up a puppet government, composed of friendly Chinese with Japanese "advisors," similar to her action in Manchuria in February, 1932. The date of proclamation was postponed until after the capture of Nanking on Dec. 14. This new government surprisingly was not limited to North China, and thus contained the possibility of expansion into Japanese control of all China.

After hostilities opened at Shanghai, both Japan and China concentrated vast numbers of men and great amounts of war materials for attack and defense. The Chinese put up both quantitatively and qualitatively a defense far superior to that of 1932, in spite of the great preponderance from the outset of the Japanese air-force. The Chinese held for two months, but finally were overborne by the mechanical superiority of their enemy. The devotion on each side, regardless of danger and destruction, was superlative. After yielding the suburbs of Shanghai, on Nov. 8, the Chinese were expected to dig in and hold a series of prepared positions between that city and Nanking. Actually, they made no vigorous stand on any line. Perhaps this was partly due to the failure of their German and Italian advisors under orders from home, since Germany and Italy were tightening their bonds with Japan in those days. In many parts of the battleground the Japanese advanced with little opposition. From the outset the war had been waged with the complete absence of mercy toward both combatants and noncombatants.

In the latter part of their retreat, the Chinese adopted the "scorched earth" and "broken tile" policy, in pursuit of which they destroyed as far as time permitted every building and public improvement that might be of value to the Japanese. A serious attempt was made to hold Nanking after the government and most foreigners had been evacuated. The capture of this city on Dec. 10 was followed by horrors which can only be described as an unrestrained orgy of robbery, lust and murder. To say that the private soldiers were out of hand is probably contrary to fact. Testimony as regards wholesale shooting of prisoners under command of Japanese officers indicates that the whole horrible episode was one of deliberate terrorism. To say that the entire Japanese army was out of hand would seem to be true in the sense that it was under no control from Tokyo, but was running as wild as if it owned the world. "Mopping up" continued in Nanking until the end of the year, with exclusion of foreign observers.

Until Dec. 23 the Japanese abstained from direct action in the province of Shantung, evidently hoping to obtain submission by negotiation and purchase, with preservation of Japanese property in the province. The Chinese forces proved loyal to their government, and in the second half of the month applied the "scorched earth" policy in Tsinan and Tsingtao. Japanese factories, shops and houses, valued at hundreds of millions of dollars, were blown up and destroyed. Japanese terrorism had then resulted only in strengthening Chinese unity and building up a resistance which involved pitiless sacrifice of property and life. The

idea of the Chinese was evidently to leave in Japanese hands the fewest possible resources and the greatest possible disorder, in expectation that the military and financial burden upon Japan would wreck her whole structure, and in particular, would force the downfall of the Japanese army and attain its replacement by a moderate and sane civil government.

THE UNITED STATES AND THE UNDECLARED WAR

The opening of hostilities between Japan and China promptly attracted the attention of the United States. On July 16, Secretary of State Hull sent a message to all foreign governments in which he set forth a program actually sufficient to heal the great sores of the world: nations should abstain "from use of force in the pursuit of policy and from interference in the internal affairs of other nations"; treaties should be observed; economic security and stability should be promoted; obstacles to satisfactory international trade should be diminished or removed; armaments should be reduced; and the nations should co-operate in peaceful and practicable plans in support of the principles stated. Within a short time more than 60 nations answered; all spoke favorably, even Japan; but that practical nation added: "The objectives of those principles can only be attained in their application to the Far Eastern situation by a full recognition and practical consideration of the actual particular circumstances of that region." Possibly this was the one touch of realism in the whole response: the ready lip-service of old and new aggressor nations to the high principles declared was farcical.

On Aug. 23 the Secretary of State gave a statement to the press on the policies of the United States in the Far East. The principles of the previous note were referred to, and were stated to apply to the Pacific area, and to include the principles of the Washington Conference treaties and the Kellogg Pact. "The Government does not believe in political alliance or entanglements, nor does it believe in extreme isolation. It does believe in international co-operation for the purpose of seeking through specific methods the achievements of those objectives set forth in the statements of July 16." China and Japan were appealed to to settle their difficulties by peaceful means. The U. S. Government refrained under heavy pressure applied by some American groups from invoking the Neutrality Laws. On Sept. 14 President Roosevelt forbade merchant vessels belonging to the Government to carry munitions to either China or Japan. The official position was, however, only one of the protection of U.S. nationals and their property in China, with no hint of protection to China. Advice was given to Americans to come out of China.

Unofficial observations indicate that exchange of ideas took place between the American and British Governments, contemplating the control of Japanese aggression by embargoes on necessary war materials which Japan lacked, such as iron, steel and petroleum products; but British financial interests in trade with Japan were too strong to allow acceptance of this peaceful and adequate plan, and the British also pleaded that they were too deeply involved in the Mediterranean to supply the necessary strengthening of their Far Eastern fleet; later, when they at last realized the vital necessity of providing for the situation, the United States Government was not ready to move.

However, on Oct. 5 in Chicago, President Roosevelt delivered an unexpected address on foreign policy in which he took the position that, while the United States wishes peace and is determined to work by pacific methods, nevertheless it must take an active part in the common concerns of the world. The country must be ready to co-operate against aggression. It might be necessary, said the President, to establish a "quarantine" against aggressor nations in order to bring them back to the observance of their treaty obligations. The application to the

action of Japan in China was unmistakable. Opinion has it that the President found too scanty and divided a response to his declaration to justify immediate further steps.

THE BRUSSELS CONFERENCE

China presented to the League of Nations on Sept. 13 a statement of her case against Japan on the ground that her territorial integrity was threatened. On the 16th the appeal was referred to the revived Far Eastern Advisory Committee. On invitation, the United States Government agreed to be represented again on this Committee. The League condemned the Japanese air raids as regards treatment of non-combatants, and on Oct. 5, immediately after the President's Chicago speech, declared Japan guilty of aggression.

The Committee then suggested that the signers of the Nine-Power Treaty of Washington hold a conference under the terms of that treaty. Invitations were sent out by Belgium. The Government of the United States accepted formally on Oct. 16, and Norman H. Davis was designated official representative, to be assisted by Stanley K. Hornbeck, recently advanced to the position of Political Advisor in Far Eastern Affairs. By American suggestion, the conference was held at Brussels.

Japan declined her invitation, as was to be expected, since she had already been condemned as an aggressor by the League of Nations, and by the public voice in the democratic countries. Germany also declined. Italy accepted, in order to act for Japan. Nineteen nations met. Japan was again asked to attend, and again refused. Foreign Secretary Eden had declared in the House of Commons on Nov. 1 that England would go as far as the United States, and no farther. Since the latter country was in no mood to make war for holding Japan to treaty obligations, and the U. S. Government had not the power to agree on embargoes, and the British Government had been hushing up the considerable talk in England toward boycotts and economic restrictions on the profitable customer, Japan, nothing but moral suasion and "strong words" remained for the activity of the Conference.

So on Nov. 15, 15 members of the conference with Italy adverse, and the three Scandinavian countries abstaining, voted a mild blast of rebuke for Japan: "There exists no warrant in law for the use of armed force by any country in the internal affairs of another country . . . the States represented at Brussels must consider what is to be their common attitude." Then the conference went into recess on Nov. 24, stating that "force by itself can provide no just and lasting solution of disputes between nations," and the American delegation, after declining to visit London, sailed for home on Dec. 2.

Meantime, the Italian delegate had shown open contempt for the democratic nations; on Nov. 4, Germany had offered mediation to the belligerents which was apparently welcomed by Japan and refused by China; on Nov. 6 Italy adhered to the "Anti-Communist Pact" which was becoming more and more of a threat to the democratic nations; on Nov. 8 Shanghai fell; on Nov. 16 Japan pointed out how the debtor nations of the west had defaulted on their war obligations; on the same day, the French senator, Berenger, revealed that in response to Japanese threats, France had forbidden the shipping of munitions to China over Indo-Chinese railways; next day the Emperor Hirohito set up "Imperial Headquarters" in his palace, extending such extraordinary arrangement from "time of war" to "time of war and incident." Next day, before the conference's adjournment, Japan, with her usual naïve contrary use of words, offered "friendly peace" to China, if that country would only abandon her "anti-Japanese policy."

Opinions differ as to whether the conference did harm or good—or nothing. Were the aggressor powers strengthened? Was public morality protected by the mere affirming of principles? Or was the futility of democratic governments, preferring peace at any cost (to other na-

tions) and unwilling to risk financial profits, demonstrated?

THE PANAY INCIDENT

After a series of minor incidents which injured the interests and persons of American citizens, one came of larger importance, which began to awaken the American people to the extreme danger of the Far Eastern situation.

At the time of the Japanese sacking of Nanking the remaining four members of the American embassy staff, with other American citizens—newspapermen and news-photographers—and five foreigners took asylum on the American gunboat, *Panay,* which proceeded to a point in the Yangtze River about 15 miles above Nanking. In the early afternoon of Dec. 12, in clear weather, and with flags prominently displayed, the *Panay* was attacked by Japanese Navy planes, which bombed and machine-gunned the ship. Three Americans and one Italian were killed, and many others were wounded. After the Americans had abandoned the ship, the attacking planes fired on the lifeboats, and an army launch fired on and then boarded the rapidly sinking *Panay.* The survivors escaped with difficulty and reported the news.

The United States Department of State immediately registered a strong protest. Before its protests had been received, however, the Japanese Government at Tokyo offered a preliminary apology. Secretary Hull, on memorandum from President Roosevelt, sent a sharp note on Dec. 14 requesting that the matter be carried to the Japanese Emperor. A reply was received by the American Ambassador, Mr. Grew, in Tokyo on Dec. 24, and was accepted in Washington on Christmas Day. Secretary Hull said in conclusion: "It is the earnest hope of the United States that the steps which the Japanese Government have taken will prove effective toward preventing any further attack upon or unlawful interference by Japanese authorities or forces with American nationals, interests or property in China."

Devoted cameramen on board the *Panay* took moving pictures during the incident, which were released to the American public early in January.

Meantime, various groups had started individual boycotting of Japanese goods, with insistence that Congress and the Administration proceed to use the instrument of embargo in co-operation with other nations, at the same time endeavoring by general agreement to remedy the great international economic evils of the world which provide certain nations with excuses for aggression.

After the occupation of Shanghai by the Japanese, a new series of difficulties arose. The Japanese declared that they were entitled to exercise all sovereign rights which China had possessed in the area. They also pushed gradually toward reduction of the rights of non-Japanese foreigners under concessions and other agreements and precedents. There was abundant evidence of a desire to exclude from privileged trade, ownership of land, and perhaps even from any trade or residence all foreigners, other than Japanese, in China.

THE NEAR EAST

The countries of the Near East were in a general state of advancing peace and progress during 1937, except for occasional acts of violence, such as the assassination of the Premier in Iraq in August, and riots in Egypt toward the end of the year, and also except for the gradual building-up of the opposition by Arabs in Palestine against the Jews and the British Government, which attained in November and December almost the proportion of undeclared war. The ties of the Balkan League and the Asiatic Pact were strengthened. Talk increased in favor of Pan-Arabism, and the partly-identical Pan-Islamism. Trouble threatened between Turkey and Syria over the status of Alexandretta; the Turks were accused of desiring the reannexation of all Syria, as a measure of security, based on the fear that France might turn over her Syrian interests to Italy in exchange for a favorable understanding in the west-

ern Mediterranean. The Italians were believed to be working actively, through radio, personal agents, and the use of money, for an Arabic union which would be friendly to Italy and increasingly opposed to Great Britain. The British were seriously embarrassed by the apparent necessity of using force in Palestine against Arabs and in favor of Jews, whom all the Arabs increasingly regarded as intruders supported by foreign bayonets. At the close of the year, this difficulty was unresolved, and movements toward independence were threatened among Arabs and Moslems in western Asia and northern Africa.

ARABIA

King Ibn Saud conducted the affairs of his kingdom during 1937 without marked change. The improvement of communications within his dominions, and preparations for the greater convenience and comfort of pilgrims to the Holy cities, Mecca and Medina, especially concerned him. His name was mentioned frequently in connection with the disturbances in Palestine and the Pan-Arabic movement. He cautiously avoided startling utterances, but was believed to oppose the partition of Palestine and to favor the tightening of ties with other Arab countries. In June he joined with Iraq and the Yemen in treaties of nonaggression and friendship. He was reported in November to have gathered troops in the neighborhood of Akaba with a view to possible occupation of the town. One may say with conviction that he will not take such action, short of participation in a great general war. Even so, one cannot predict that he will take the Italian side as against the British. Despite many grievances and disappointments in dealings with England, a profounder distrust exists with regards to the aims of Italy.

EGYPT

The year 1937 was the first year of Egyptian independence under the arrangements concluded with Great Britain in 1936. At the outset the Wafd, or Nationalist party, under Premier Mustapha Nahas, was in full control of the government, with the backing of the great majority of the voters. The youthful king was scarcely visible in the picture. The English Government was remaining more assiduously than ever in the background, revealing unprecedented harmony with Egypt, because both were so conscious of growing Italian pretensions. The story of the year's events proceeded to an unexpected outcome. At the very close of the year Nahas Pasha and his followers were thrown from power, and the young king emerged with a quasi-Fascist dictatorship after the pattern of Greece under George II and Metaxas, or of the equally new arrangements in Rumania.

The international position of Egypt was established according to plan by assembling at Montreux, Switzerland, late in April, a conference on the abrogation of the capitulations for Egypt. By this convention, 23 years after Turkey had declared such abrogation and 13 years after the acceptance of Turkey's freedom by the rest of the world, Egypt rid herself of the extraterritorial rights of foreigners and of foreign control over her tariffs. A regime of transition was provided, during which mixed courts, composed of both Egyptian and foreign judges, will protect rights and diminish property losses of foreigners. The signing of this document on May 10 was followed on May 26 by the formal admission of Egypt to the League of Nations. Both of these important steps were, of course, engineered by English diplomacy. A cynic might say that, owing to destruction of the real influence of the League, largely through British machinations, Egypt was presented with an empty shell, or with the right to appear at Geneva from time to time in colorful but ineffective array.

Preparations began for the investiture of King Faruk on July 29. Having attained the age of 18 by Moslem calculation, amid vast popular rejoicings, the young monarch took in the presence of Parliament

the oath to observe the Constitution and defend Egypt. Religious services, banquets, and a military review further emphasized the occasion. A more spectacular coronation was planned for the King's eighteenth birthday by the Western calendar, Feb. 11, 1938.

Shrewd observers remarked that from this time the Wafd would decline in influence. Possibly the group which had sustained the late King Fuad against the Nationalists, with persistant British support, already had the situation in hand. Nahas Pasha, however, himself proceeded somewhat after the Fascist-Nazi pattern of preparation for dictatorial control. In particular, he increased the number and influence of his "Blue Shirt" organization. During October and November student opposition developed, and riots, not unaccompanied with bloodshed, appeared in different Egyptian cities. Each side accused the other of violating the Constitution. The King's steadily increasing popularity emboldened him and his advisors to press for the disbanding of the 24,000 Blue Shirts, and for other adjustments. Rumor had it that Ahmed Maher, brother of Ali Maher, head of the King's household, would succeed Nahas. News came however on Dec. 30 that the Premier would be Mohammed Mahmud Pasha, who had before held office with royal and British support, in disregard of constitutional and parliamentary forms. The Wafd obtained votes of nonconfidence in the new Cabinet but in vain.

Talk was heard during the year of promoting the candidacy of King Faruk to the empty Caliphate of Islam. The objection that he is not of the Arab tribe of Koreih is met by the fact that the Ottoman Turkish Caliphs had no claim to such descent. More serious perhaps is the social difficulty involved in the fact that the attractive young woman, Faridah Dhul Kader, daughter of an Egyptian judge, Queen of Egypt by marriage with Faruk on Jan. 20, 1938, wears no effective veil, and apparently ignores the orthodox Moslem doctrine of the "necessary" seclusion of women. The pride of Egypt continued to increase toward intellectual and religious leadership over the Arabian and Mohammedan world.

PALESTINE AND GREAT BRITAIN

The Royal Commission finished its labors on Jan. 10, and returned to London to work on its report. Six months elapsed before the publication of the report on July 7 (this happened to be the date of the encounter at the Marco Polo Bridge near Peiping). The *Daily Mail* and other journals were able, in the middle of the period, to forecast quite accurately the principal recommendations of the Commission. On account of the coronation, small attention was paid to this, so that the Commission's plan surprised most of the world.

The Commission proposed the partition of Palestine into a Jewish state, an Arab state, and a permanent mandate for Britain. The provisional map showed an area for the Jews from south of Jaffa to north of Haifa, extending eastward to the Jordan in the north, but including only the coastal strip from Mount Carmel south; the area proposed was only about 1,800 square miles. The British mandate would perhaps involve 500 square miles, including Jerusalem and Bethlehem, with a narrow belt of land coming out to the Mediterranean on each side of Jaffa. The remainder of the 9,000 square miles of Palestine would be added to the 30,000 square miles of Transjordan in an Arab state, of which perhaps the Amir Abdullah would be king. The present population of these three areas may be estimated as 500,000 for the Jewish state, 200,000 for the British Mandate, and 1,000,000 for the Arab state, including Transjordan. Minor measures proposed suggest considerable difficulty in the operation of the scheme, since, for example, the Arabs would own Jaffa, entirely separate from the rest of their territory; the British would control as enclaves Nazareth and the shores of the Sea of Galilee, and the

Jews would have commercial rights at Akaba on the Red Sea.

The plan of partition initiated widespread discussion. The British Cabinet approved it at once. The British Parliament preferred to wait until the measure had been approved by the League of Nations, and investigated by another commission. The League of Nations approved a modification of the present mandate but also desired that a commission study on the ground the Royal Commission's plan, together with certain alternatives. The Jews, at the Zionist Conference in Zurich, authorized negotiations, being pleased with the idea of an independent Jewish state, but dissatisfied with the small quantity of land proposed. The Arabs, while approving the establishment of an independent Arab state, objected in varying degrees to the permanent alienation to the Jews of any Palestinian land. The American and the French Governments pointed out to the British Government that a change in the mandate would require consultation with them, in so far as the rights of their citizens might be modified.

The various debates, notes, and resolutions involved much time, during which the opposition of the Arabs to partition increased steadily. A non-official Arab Congress was held at Blundan near Damascus in Sept. 4, and practically without opposition resolutions were passed against not only the proposal for partition, but against the maintenance of the Balfour Declaration and the continued immigration of the Jews. An Arab state was called for which would include all Palestine, and which would accept the Jews already in the country as a protected minority. An inchoate Pan-Arab government was suggested, with a committee representing all Arab countries, collecting funds and distributing propaganda the world over to support the resolutions of the Congress.

Before the Congress met, disturbances had reappeared in Palestine, though not without participation by anti-Zionist Jews, consisting principally of attacks and assassinations by Arab terrorists. These continued to increase up to a climax in the murder by three Arabs of Lewis Yelland Andrews, District Commissioner for Galilee, and his aide, when leaving church at Nazareth on Sept. 26. The British Palestinian Government promptly inaugurated severe measures, which beginning Nov. 11 amounted to martial law, with military courts which had final power of life and death over persons accused of acts of violence, and carrying, or even possessing weapons. During the remainder of the year violence increased rather than diminished. The government forces, advised by Sir Charles Tigert, who had been brought from police work in India, endeavored to find and confiscate all arms in the possession of Arabs. High Commissioner Sir Arthur Wauchope, affirmed to be ill, and privately accused of being too lenient, resigned as of February, 1938, and in his place was appointed Sir Harold McMichael, experienced administrator in the Sudan and Tanganyika. Violence continued to the end of the year, with a small battle in which 50 Arabs were slain near Tiberias on Christmas Day.

On Jan. 3 the British Government published terms of reference for a new technical commission, which was to go to Palestine and make a detailed study of the geographical and financial possibilities of the partition, as well as of alternative plans. Months and even years were expected to elapse before a definitive political settlement. It was hoped that public order and economic prosperity would return gradually through "palliative measures."

TURKEY

For Turkey the year 1937 was one of quiet progress, except for a revolt of the Kurds. An attempt was made to settle these difficult subjects in western Anatolia, and so to scatter them that they could not again rise in revolt. Many exchanges of visits took place between Turkish officials and those of other European and Asiatic countries. The question of Alexandretta was never entirely quiet. The second quinquennial His-

torical Congress was held in September.

Announcement was made on Sept. 22 that Ismet Iuönu, who had been Premier almost continuously since the war with Greece, had been given leave for 45 days, and in the meantime his place would be taken by Jelal Bayar, Minister of Commerce. On Oct. 25 Bayar became the head of the Cabinet. Ismet was said to be leaving on account of ill health, but it was believed that he had displeased President Ataturk in relations with Russia, in failing to secure the re-election of Turkey to a semi-permanent seat on the Council of the League of Nations, and in agreeing to the terms of the Nyon pact against submarine piracy.

FOREIGN SERVICE OF THE UNITED STATES

By Nathaniel P. Davis

Division of Foreign Service Administration, Department of State

ADMINISTRATION

Regulations.—In connection with the Foreign Service Act of Feb. 23, 1931, the administrative regulations embodied in Executive Orders (Nos. 5642/4, June 8, 1931) are of special importance. These regulations give practical effect to some of the chief purposes of the act. They set up machinery whereby it is put into operation by providing for a Board of Foreign Service Personnel, a Board of Examiners, a Foreign Service Officers' Training School, and a Foreign Service Officers' Training School Board.

Board of Foreign Service Personnel.—The duties of this Board are to examine into the character, ability, efficiency, experience and general availability of all members of the Service with a view to promotions, transfers and separations; to consider controversies or delinquencies among Service personnel, and to recommend those officers who have shown special capacity for promotion to the grade of minister. The Board is composed of not more than three Assistant Secretaries of State, one of whom shall be the Assistant Secretary having supervision over the Division of Foreign Service Personnel, who shall be chairman. The Chief of the Division of Foreign Service Personnel and one other member of the division may attend the meetings of the Board, but are not entitled to vote in its proceedings.

Board of Examiners.—The duties of the Board are to formulate rules to determine the scope and method, and hold examination of applicants for commission to the Foreign Service, and to determine those who are fitted for appointment. The examinations, which shall be both written and oral, are open only to Americans of good standing between the ages of 21 and 35 specially designated by the President for examination, who have been citizens of the United States for at least 15 years. American clerks and employees in the Foreign Service are granted certain exceptions concerning age and may be exempted by the Board from the written examinations. The Board is composed of not more than three Assistant Secretaries of State designated by the Secretary of State, the Chief of the Division of Foreign Service Personnel, and the Chief Examiner of the Civil Service Commission.

OFFICERS' TRAINING SCHOOL

Purposes.—The purpose of this school is to provide a term of instruction in the Department of State as a period of probation for those successfully passing the examinations given by the Board of Examiners, and to judge, during this period, the new appointees to the Service as to their qualifications for advancement and assignment to duty as a Foreign Service officer. The governance of the school is set forth in rules and

regulations prescribed by the Secretary of State. The school is under the direction of the Foreign Service School Board.

Foreign Service School Board.—The duties of the Board are to act in all matters concerning the functions of the school with the approval of the Secretary of State; to select the director of the School from among the officers of the Foreign Service with the approval of the Secretary of State, and in its discretion to select other instructions from among the qualified officers of the Department of State, the Foreign Service, the executive departments of the Government, and other available sources. The Board is composed of the Assistant Secretaries of State composing the Board of Foreign Service Personnel, one Foreign Service officer assigned for duty in the Division of Foreign Service Personnel, and the director of the School.

NOTE—For growth and development of the Foreign Service of the United States see THE AMERICAN YEAR BOOK for 1934, p. 50.

PERSONNEL

Changes.—During 1937 one examination was held on Sept. 13, 14, 15 for appointment to the American Foreign Service. At this examination 442 took the written tests, of whom 58 presented themselves for the oral examination. In addition to the above, five subordinates in the Foreign Service, pursuant to the authority of law, presented themselves for and passed the oral examination and were certified as eligible for appointment.

Promotions from the Ranks.—Since 1925, when the policy was formulated of promoting outstanding officers of the Service to the grade of Minister and Ambassador instead of recruiting them solely from civil life, there have been marked advances. Of a total complement of 17 Ambassadors and 38 Ministers, 10 of the former and 15 of the latter have previously served in the ranks of the Foreign Service or of the Department of State. In addition, the Diplomatic Agent and Consul General at Tangier, Morocco, and the Minister Resident and Consul General at Baghdad, Iraq, are Foreign Service Officers.

Losses to the Servce.—During 1937 there were six deaths, 12 retirements and 13 resignations from the Foreign Service. At present the Service totals 702 career officers.

CLASSIFICATION, FOREIGN SERVICE, 1937

	Salary	Number as of Dec. 31, 1937
Heads of Missions		
Ambassadors	$17,500	17
Ministers	12,000	1
Ministers	10,000	37
Diplomatic Agent and Consul General (Tangier)	FSO*	1
Minister Resident and Consul General (Baghdad)	FSO*	1
		57

* Foreign Service Officer.

Foreign Service Officers		
Class 1	$9,000–$10,000	35
Class 2	8,000– 8,900	28
Class 3	7,000– 7,900	36
Class 4	6,000– 6,900	62
Class 5	5,000– 5,900	72
Class 6	4,500– 4,900	99
Class 7	4,000– 4,400	87
Class 8	3,500– 3,900	91
Unclassified (a)	3,000	75
Unclassified (b)	2,750	74
Unclassified (c)	2,500	43
		702

Clerks — Senior		
Class 1	$4,000	1
Class 2	3,750	2
Class 3	3,500	7
Class 4	3,250	15
Class 5	3,000	53
Clerks — Junior		
Class 1	2,750	60
Class 2	2,500	114
Class 3 all under	2,500	1400
		1652

DIPLOMATIC PERSONNEL

AMBASSADORS

Accredited by United States			Accredited to United States	
Argentina	Alexander W. Weddell	1933	Señor Don Felipe A. Espil	1931
Belgium	Hugh S. Gibson	1937	Count Robert van der Straten-Ponthoz	1935
Brazil	Jefferson Caffery	1937	Mr. Oswaldo Aranha	1934
Chile	Norman Armour*	1938	Señor Don Manuel Trucco	1933
China	Nelson T. Johnson	1935	Dr. Chengting T. Wang	1937
Cuba	J. Butler Wright	1937	Señor Dr. Pedro Martínez Fraga	1937
France	William C. Bullitt	1936	Mr. Georges Bonnet	1937
Germany	Hugh R. Wilson*	1938	Herr Hans Heinrich Dieckhoff	1937
Great Britain	Joseph P. Kennedy*	1938	The Honorable Sir Ronald Lindsay	1930
Italy	William Phillips	1936	Signor Fulvio de Suvich	1936
Japan	Joseph C. Grew	1932	Mr. Hirosi Saito	1934
Mexico	Josephus Daniels	1933	Señor Dr. Don Francisco Castillo Nájera	1935
Peru	Laurence A. Steinhardt	1937	Señor Don Manuel de Freyre y Santander	1930
Poland	Anthony J. Drexel Biddle, Jr.	1937	Count Jerzy Potocki	1936
Spain	Claude Gernade Bowers	1933	Señor Dr. Don Fernando de los Ríos	1936
Turkey	John Van A. MacMurray	1936	Mr. Mehmet Münir Ertegün	1934
Union of Soviet Socialist Republics	Joseph E. Davies	1936	Mr. Alexander Antonovich Troyanovsky	1934

* Appointed but had not yet assumed office on date of compilation of this table.

MINISTERS

Accredited by United States			Accredited to United States	
Albania	Hugh Gladney Grant	1935	Mr. Faik Konitza	1926
Austria	(Vacant) Footnote (*)		Mr. Edgar L. G. Prochnik	1925
Bolivia	Robert Granville Caldwell	1937	Señor Dr. Don Luis Fernando Guachalla	1936
Bulgaria	Ray Atherton	1937	Mr. Dimitri Naoumoff	1936
Canada	(Vacant) Footnote (†)		The Honorable Sir Herbert Marler	1936
Colombia	(Vacant) Footnote (‡)		Señor Don Miguel López Pumarejo	1935
Costa Rica	William H. Hornibrook	1937	Señor Don Ricardo Castro Beeche	1936
Czechoslovakia	Wilbur J. Carr	1937	Mr. Vladimír Hurban	1936
Danzig, Free City of	Waldemar J. Gallman (Consul in Charge)	1934		
Denmark	Alvin Mansfield Owsley	1937	Mr. Otto Wadsted	1930
Dominican Republic	R. Henry Norweb	1937	Señor Don Andrés Pastoriza	1935
Ecuador	Antonio C. Gonzalez	1934	Señor Capitán Colón Eloy Alfaro	1933
Egypt	Bert Fish	1933	Mohamed Amine Youssef Bey	1935
El Salvador	Robert Frazer	1937	Señor Dr. Don Hector David Castro	1934
Estonia	Frederick A. Sterling	1937	Mr. Charles Kuusik, Acting Consul General of Estonia in New York City in charge of Legation	1932
Finland	H. F. Arthur Schoenfeld	1937	Mr. Eero Järnefelt	1935
Greece	Lincoln MacVeagh	1933	Mr. Demetrios Sicilianos	1935
Guatemala	Fay A. Des Portes	1936	Señor Dr. Don Adrian Recinos	1928
Haiti	Ferdinand L. Mayer	1937	Mr. Elie Lescot	1937
Honduras	John D. Erwin	1937	Señor Don Julio Lozano	1935
Hungary	John Flournoy Montgomery	1933	Mr. John Pelényi	1933
Iran	(Vacant) Footnote (§)			
Iraq	Paul Knabenshue (Minister Resident and Consul General)	1932		

Accredited by United States			Accredited to United States	
Ireland	John Cudahy	1937	Mr. Michael MacWhite	1929
Latvia	Frederick A. Sterling	1937	Dr. Alfred Bilmanis	1935
Liberia	Lester A. Walton	1935	———	
Lithuania	Owen J. C. Norem	1937	Mr. Povilas Zadeikis	1935
Luxemburg	Hugh S. Gibson	1937	———	
Monaco	Paul C. Squire (Consul in Charge)	1936	———	
Morocco	Maxwell Blake (Diplomatic Agent and Consul General)	1925	———	
Netherlands	George A. Gordon	1937	Jonkheer H. M. van Haersma de With	1934
Nicaragua	Boaz W. Long	1936	Señor Dr. Don León De Bayle	1937
Norway	Florence Jaffray Harriman	1937	Mr. Wilhelm Munthe de Morgenstierne	1934
Palestine	George Wadsworth (Consul General in Charge)	1935	———	
Panama	Frank P. Corrigan	1937	Señor Dr. Don Augusto S. Boyd	1936
Paraguay	Findley B. Howard	1935	———	
Portugal	Herbert Claiborne Pell	1937	Dr. João Antonio de Bianchi	1933
Rumania	Franklin Mott Gunther	1937	Mr. Charles A. Davila	1929
San Marino	John R. Putnam (Consul General in Charge)	1937	———	
Siam	Edwin L. Neville	1937	Phya Abhibal Rajamaitri	1935
Sweden	Fred Morris Dearing	1937	Mr. W. Boström	1926
Switzerland	Leland Harrison	1937	Mr. Marc Peter	1920
Syria	Ely E. Palmer (Consul General in Charge)	1937	———	
Union of South Africa	Leo J. Keena	1937	Mr. Ralph William Close	1934
Uruguay	William Dawson	1937	Mr. J. Richling	1934
Venezuela	Meredith Nicholson	1935	Señor Dr. Don Diógenes Escalante	1936
Yugoslavia	Arthur Bliss Lane	1937	Mr. Constantin Fotitch	1935

(*) Austria: Chargé d'Affaires *ad interim:* John C. Wiley.
(†) Canada: Chargé d'Affaires *ad interim:* John Farr Simmons.
(‡) Colombia: Chargé d'Affaires *ad interim:* Winthrop S. Greene.
(§) Iran: Chargé d'Affaires *ad interim:* Cornelius Van H. Engert.

THE LEAGUE OF NATIONS AND ASSOCIATED AGENCIES

By The Associates

The Geneva (Switzerland) Research Center

THE UNITED STATES AND THE LEAGUE

The year 1937 presented the most serious international problems which either the League of Nations or the United States has had to face since the World War. Civil strife and foreign intervention in Spain, extensive hostilities in China, and a world-wide ideological cleavage brought a sudden shift in the international situation which deeply affected world peace and co-operation. The League of Nations manifested a decided resistance to unlawful practices, notably in the Spanish and Chinese conflicts, while the United States gave increasingly serious attention to world affairs.

The outstanding element in the relations of the two was the strikingly clear illumination of the fact that, whatever the differences in methods, their objectives are identical. Both stand for law, respect of treaties, community of economic interests, and the co-operation of nations. Both are founded on the democratic and liberal, in contradistinction to the authoritarian and military, principle. The United States increasingly stood forth as the most resolute defender of that ideal; the League continued to be its projection into the international sphere.

As world issues sharpened, this affinity of purpose appeared more

clearly than ever before. It did not take concrete form, however, nor imply any changes in the different methods followed. The League remained an organization for consultation, negotiation, evaluation and even enforcement; the United States continued uncommitted except for the uncertain obligations of the Pact of Paris and the Neutrality Act.

The first illustration of this community of views was Secretary of State Hull's transmission to the League of his July 16 statement on the fundamental principles guiding American foreign policy, which the President of the Council later stated were in "close harmony" with those of the League. Even more dramatic was President Roosevelt's Chicago speech of Oct. 5, whose militant championship of peace, sweeping denunciation of aggression, and suggestion of "quarantine" for international outlaws, well summarized the League's basic principles. The third illustration came during the League's most serious crisis, the Sino-Japanese undeclared war, where again, as in 1931, the Government announced that its conclusions were "in general accord with those of the Assembly of the League of Nations." Finally, the friendly co-operative relationships inconspicuously built up during years continued and even intensified during 1937. While no change of principle or obligation took place, contacts which had been irregular or hesitant tended to become firmer.

Most complete of these was American participation in the International Labour Organization. There the United States completed its third year as a full member. It was represented by full delegations at all the main conferences; acted as host for the Textile Conference in Washington, and had experts in all the technical committees. Though a newcomer in the Organization, it is already one of its most influential members.

American co-operation in direct League activities, while less complete, was nevertheless both extensive and active. The Government maintained its representation in the League's two major conferences, Disarmament and Economic, which, though in suspense, continued in existence. As regards disarmament, it did what little was possible during the year. As regards economics, it took part in the only plenipotentiary meeting, the Sugar Conference, and co-operated extensively otherwise. In the social field, it was a full member of the Social Committee, a dominating participant in the Opium Committee, and an important participant in the League's health work. Much American co-operation took place in the League's work in cultural relations, and the League was invited to have an exhibit at the New York World's Fair in 1939. Finally, the United States continued to communicate its treaties for registration by the League.

The day-to-day co-operation between Geneva and Washington continued close and cordial. The Government was most helpful in providing information on the wide variety of questions discussed through the League. This was mutually advantageous, to the League in enlarging its work, and to the United States in advancing its general policies. Important changes in the avenues of this co-operation took place, however, during the year, when Hugh R. Wilson, American Minister at Berne, returned to Washington and Prentiss Gilbert of the Geneva Consulate went to Berlin.

Serious gaps existed in this co-operation, however, due to America's non-membership in the League. Most important was her absence from the two central agencies, Assembly and Council, which both initiate and approve the League's many activities. American participation was not, therefore, fully effective, either as regards initiative or control. The result was disadvantageous both to the United States and the League, and gave interest to the proposals for League reform, particularly for separating its work into fairly autonomous sections.

America's most striking single absence still remained its non-adhesion to the World Court. Despite the appeal of every President and Secre-

tary of State since the war, and one favorable Senate action, final agreement has not yet been reached on this question. The only American contacts with the Court continue to be through a Judge of American nationality and participation by the American Group in the elections.

American interests were also frequently affected by League activities in which the Government had no part, as is inevitable when nearly threescore nations transact business through a common agency. The United States was much concerned, for instance, in the League's work on mandates, whether the Pacific Islands or Palestine. Its interests could have been better served, however, by active participation at Geneva.

The disadvantages of American non-membership in the League cut even more severely, however, in the other direction. Unquestionably this has been the League's greatest handicap. Not only did America's unexpected decision not to join create a disconcerting distress at the outset, but its indifference during the first years undoubtedly slowed up the whole effort. The partial co-operation since effected has not overcome these handicaps, as indicated indeed when Italy cited America's action as having shown the way for her own withdrawal. Nowhere more than at Geneva was agreement felt with Secretary Hull's statement, that "the interdependence of nations is as much a fundamental factor in the organization of civilized existence as the interdependence of individuals comprising communities and of communities comprising nations," and with President Roosevelt's statement that "in a world of mutual suspicions, peace must be affirmatively reached for. It cannot just be wished for, it cannot just be waited for."

AMERICAN FOREIGN POLICY

The increasing gravity of the international situation during 1937 led to two exceptional pronouncements on American foreign policy. The first, a statement issued on July 16 by Secretary Hull, was communicated to the League as well as to all Governments; the second, President Roosevelt's Chicago speech, while not communicated to the League, came during its final deliberations on the Sino-Japanese conflict. Both had profound repercussions.

Secretary Hull's action in transmitting his statement to the League "for purposes of information" was much appreciated. The United States had frequently made important declarations of policy on particular issues in connection with League work; this was the first time, however, that it had made a spontaneous communication outlining its basic philosophy. The Secretary-General replied that League members "will highly appreciate the courtesy" of the United States; the President of the Council, M. Delbos, Foreign Minister of France, stated that the Council would note the communication "with interest and gratification." He added that the objectives proclaimed by the United States were "in close harmony with those which the Covenant of the League of Nations set before the Members of the League."

This viewpoint was amply corroborated by Mr. Hull's statement and the replies of some threescore Governments. The objectives set up by Mr. Hull corresponded exactly with those of the Covenant. His statement constituted, however, a declaration of principles rather than a programme. The analogy, therefore, should not be carried too far, as the League Covenant goes on to establish a complete mechanism of consultation, mediation, and, ultimately, enforcement. Many Government replies brought out these points.

President Roosevelt's Chicago speech was even more striking. Coming after his extended trip through the country and at the moment when the League was completing its report on the Sino-Japanese conflict, the speech was a diplomatic event of the first magnitude, especially in Geneva. Its denunciation, in terms unequalled in Europe, of international aggression and lawlessness, its bitter condemnation of the ten per cent of the world's population "who are

threatening a breakdown of all international order and law," and the suggestion of an extension to international lawlessness of the "quarantine" imposed by the community in case of epidemics echoed throughout the world. It had a definite part in the League's action in the Sino-Japanese affair, a still greater part in a general uplift amongst the peaceful nations, and a bitter reaction in certain countries which took the condemnation to themselves.

LEAGUE REFORM

The question of League reform was one of the major problems of 1937. The non-membership of nations such as the United States, Germany, Japan, Brazil and later Italy, together with the increasing tendency for the world to divide into ideological groups, gave the question ever-increasing urgency. Two different approaches were attempted, the first rather technical, the second, highly political, in the form of proposals by Chile and Argentine. Both have a considerable American interest because of American co-operation with the League. The technical reports touching non-member states showed that the League had always had "a very open attitude towards both the membership and, failing that, the co-operation of such non-members." These states have replied in different ways at different times, though "a very great, it might almost be said a surprising amount, of collaboration with non-members has already been achieved." This has disadvantages, however, as it is uncertain and fitful and makes it possible for non-members to enjoy "all or most of the advantages of membership without incurring any of the obligations thereof." Nevertheless, this liberal policy towards non-members tended to increase during the year. Already two organizations associated with the League—the Labour Office and the Court—include important non-member states, while others, particularly the Health and Transit Organizations, are tending in that direction.

The question of universality precipitated a far wider discussion. Chile had urged an "immediate consultation of non-member states with regard to desirable reforms," and transmission of all relevant material with an invitation "to make such observations or suggestions as they may think fit." Most other nations, while sympathetic with the objective, felt that the moment was inopportune, particularly with Japan invading China, Germany and Italy hostile, and the United States co-operating as fully as practicable. The Assembly requested the Council, therefore, to examine, "the conditions in which such information should be obtained as and when opportunity offers."

The Argentine introduced a more limited resolution. The Argentine Pact, the Pact of Paris, and the League Covenant, while having the same objectives, differed both as to method and as to states participating, particularly as regards the United States, which is a party to the first two but not to the third. In view of the fact that the Conference convened at Buenos Aires by President Roosevelt "was actuated by the desire to supplement and strengthen the League's efforts to prevent war," the Argentine proposed that "in the event of war or a threat of war, the League should take such measures and establish such contacts as may be necessary to associate in its efforts for the maintenance of peace those states which are not members of the League but are mutually bound by the above-mentioned Covenant." The Assembly accepted this proposal with the provision that the League should not thereby delay its own action.

CHINA AND JAPAN

The Sino-Japanese conflict, which had smouldered ominously since the Manchurian crisis in 1931, confronted the nations during 1937 with the most dangerous and widespread hostilities since the World War. Both the League, as an agency of peace and co-operation, and the United States with its Far Eastern interests, were deeply involved. It was natural that the consultation and co-operation established in the original Manchurian conflict should have been resumed.

The League Assembly, as before, was in session at the moment. It decided to refer the question to the special Advisory Committee set up to follow the original Manchurian dispute and having a well-chosen membership of Pacific states, including the United States. The American Minister in Berne, Leland Harrison, addressed a communication to the League recalling that the Committee had been created "to aid the Members of the League in concerting their action and their attitude and with non-Member States. . . . In order that there may be no misunderstanding with regard to the American Government's position and no confusion or delay flowing from uncertainty, the American Government feels constrained to observe that it cannot take upon itself those responsibilities which devolve from the fact of their membership upon members of the League. . . . The American Government, believing thoroughly in the principle of collaboration amongst states of the world seeking to bring about peaceful solutions of international conflict, will be prepared to give careful consideration to definite proposals which the League may address to it, but will not, however, be prepared to state its position in regard to policies or plans submitted to it in terms of hypothetical enquiry."

The Committee's first action was a formal protest against the indiscriminate aerial bombardment of open Chinese cities and the killing of thousands of innocent non-combatants. While the American representative did not speak during the discussion, Secretary Hull immediately issued a parallel statement read to the League Committee the next day by Mr. Harrison that "any general bombing of an extensive area wherein there resides a large population engaged in peaceful pursuits is unwarranted and contrary to the principles of law and humanity."

Consideration was next given as to what action should be taken regarding the system of technical collaboration which had existed for some years between the League and China in connection with questions of health, transit, road-building, agriculture, civil service and the like. The Chinese felt it would be necessary to forego such normal activities and concentrate all available funds on the immediate emergency. Here again, the United States had throughout been represented, though by an observer, and Mr. Harrison, accompanied by Howard Bucknell, American Consul in Geneva, was present during the discussions. The Committee worked out a detailed plan particularly for the evacuation of refugees and the prevention of plagues and increased the League's appropriation to two million Swiss francs.

Meanwhile, the substantive work was advancing more rapidly than anticipated. A general unanimity of viewpoint being quickly discernible, a drafting committee was established, the United States participating on the same basis as on the principal Committee. It was on the final day of its meeting that a forecast of President Roosevelt's speech was given by American journalists in Geneva to the various delegates. The impression could hardly have been greater; if it did not affect the actual terms of the report, it undoubtedly helped in the unanimity of the final vote.

The reports were considerably sharper than expected. They found that Japan's military operations were "out of all proportion to the incident occasioning them"; that they could not "possibly facilitate or promote the friendly co-operation" allegedly desired; that they could be justified "neither on the basis of existing legal instruments nor on that of the right of self-defense" and that they were "in contravention to Japan's obligations under the Nine-Power Treaty and the Pact of Paris." The Assembly subsequently expressed "its moral support for China and recommends that Members of the League should refrain from taking any action which might have the effect of weakening China's power of resistance and thus of increasing her difficulties in the present conflict, and should also consider how far they can individually extend aid to China." The Assembly

also recommended a further effort at mediation under the Nine-Power Treaty, where the United States had the same juridical position as other states.

On the same day that the Assembly unanimously adopted these proposals, Secretary Hull issued a parallel statement in Washington. This statement also found Japan's action "inconsistent with the principles which should govern the relationship between nations and contrary to the Nine-Power Treaty and the Pact of Paris." "Thus, the conclusions of this Government are in general accord with those of the Assembly of the League of Nations." This statement was transmitted to the League through Mr. Harrison and read at the closing session of the Assembly. It was received with appreciation, for it demonstrated again, as in 1931, that the American attitude coincided with the League's. In due course the Nine-Power Conference met at Brussels, though without successful results, and the question bid fair to come up again in the League.

ECONOMICS AND FINANCE

The activities of the League and of the United States in economic and financial matters continued during 1937 to follow similar and often identical lines. The two principal American activities remained the Tripartite Monetary Agreement and the reciprocal Trade Treaties program, both of which corresponded with the League's general policy. Similarly, the League continued its customary work and received a large measure of American support. While there were few meetings which called for official representation, Americans were present at practically all of the various Committees of Experts and exerted a considerable influence not only because of the nation's predominant position but also because of their own technical skill. The only important American absence was nonrepresentation in the Second Committee of the Assembly which provides a focal point where the various studies carried out by experts not speaking for Governments are brought together once a year for general review by Government representatives.

The International Sugar Conference in London was the only meeting during the year involving official representation. This was a direct consequence of the World Economic Conference of 1933. The year after that Conference an exploratory meeting had felt that further action was premature at the moment in view of uncertainty as to the American sugar policy and lack of agreement as to the Chadbourne Plan. The first obstacle was soon removed by American legislation, the second by continued negotiations the following year. Consequently, the president of the World Economic Conference issued invitations through the secretary-general of the League for a formal meeting in London. The American delegation was headed by Norman H. Davis, Ambassador at large, as chairman, and Felipe Buencamino, carrying for the first time the title of "Delegate for the Commonwealth of the Philippines." The attempt to bring harmony amongst so many different viewpoints in so vital a world commodity as sugar proved arduous but success was finally achieved through the various interests accepting definite obligations, the United States, for instance, to maintain its present proportion of imported sugar as well as its present quotas and tariff.

Another important development on the unofficial side was the strengthening and extension of American expert participation. American influence on the main Economic Committee was greatly advanced by the appointment of Henry F. Grady, who had had a large part in negotiating the Reciprocal Trade Agreements. Mr. Grady was also appointed to the new Committee on Raw Materials, which had aroused much interest in Washington. American representation on the Financial Committee was strengthened by the appointment, as substitute member, of William W. Riefler, former chairman of the Government's Central Statistical Board, and subsequently, as full member, of T. Jefferson Coolidge, former Assistant Secretary of the

Treasury. Two other important appointments were renewed, that of Dana Durand, of the Tariff Commission, to the Committee of Statistical Experts, and of Mitchell B. Carroll to the Fiscal Committee. These appointments, while unofficial, were known to have the approval of the Washington Administration, and brought to Geneva several persons who had held high Government positions and were thoroughly conversant with Government views. Twice when such experts were unable to attend they were replaced by Government officials.

Mr. Grady, as a member of the Economic Committee, made known American views not only as regards particular activities but also as regards the general analysis of the world economic situation, which formed the basis of the Assembly's discussions. He took a no less important part in the three sessions of the Raw Materials Committee and in the shaping of its report, which, while greatly deflating the issue, is, nevertheless, a valuable contribution to the subject. Mr. Riefler was present at both sessions of the Financial Committee and participated not only in the general discussions on exchange control, housing financing, and agricultural credit systems, but also on those pertaining to the Austrian, Bulgarian, and Hungarian loans, for the last-named of which Royall Tyler was present as the Committee's representative on the spot. Mr. Durand took part in the discussions of the Committee of Statistical Experts in connection with international census statistics and raw materials and foodstuffs statistics and Mr. Carroll in the Fiscal Committee meeting, which made a special study of fiscal evasion, with the aid of a grant from the Rockefeller Foundation. H. Merle Cochran of the Paris Embassy and F. White replaced Reuben Clark, chairman of the Council of Foreign Bondholders, in the two sessions of the Committee on International Loan Contracts.

TRANSIT

In the kindred field of Communications and Transit American co-operation during 1937 was largely confined to information on subjects under study, as certain work in which the United States had participated, such as the buoyage and lighting of coasts and pollution of the sea by oil-burning vessels was not active. Nevertheless the Government transmitted information showing the extent to which it is applying the recommendations adopted by the Geneva Passport Conference; forwarded details as to statistics relating to road accidents, and expressed the desire to be informed of any inter-governmental conference on calendar reform. The League's desire to secure universality of co-operation in tasks so obviously technical led to the elaboration of a new statute giving the Transit Organization an autonomous basis assuring non-member states full equality of status.

DISARMAMENT

With armed conflicts in the Mediterranean and the Far East and a feverish armaments race under way, any hopes of amelioration of the armaments burden sank to their lowest point in 1937. Nevertheless, the machinery which the League had laboriously put together was kept in being, the United States co-operating largely. Her most important contribution was in the Bureau of the Disarmament Conference, where, shortly after German and Italian suggestions that President Roosevelt call a new conference, presumably outside the League, Hugh R. Wilson, American Minister to Switzerland, while not optimistic of immediate results, said that "the organization set up must be kept intact, even if for a while it remained inactive. Nothing should be done to impair its usefulness; for, although the Conference had not yet arrived at complete agreement, it had done a vast amount of preparatory work which could be capitalized when the moment came to go forward." Mr. Wilson also wondered if they had not erred in attempting "to solve the problem of armaments without concurrently attempting the solution of other prob-

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lems," and stressed the folly of trade barriers and uneconomic subsidies.

The United States also confirmed its willingness to accept a system of publicity of national defense expenditure based on the draft convention already prepared. Its consistent practice had been to publish all defense expenditures and to furnish complete statistics for the League's *Armaments Year Book*. Similarly, its legislation enabled it to comply with practically all the provisions for the supervision of the international trade in arms.

HEALTH

American co-operation both official and unofficial in the League's health work continued to be extensive. The most important official conference during the year was that on rural hygiene for Eastern countries, which brought to Java representatives of 13 health administrations. The United States appointed Dr. Cristobal Manalang, Chief Pathologist of the Culion Leper Colony, "official delegate of the Commonwealth of the Philippines," while American public health experience was represented by Dr. Selskar M. Gunn of the Rockefeller Foundation. The Conference went deeply into the whole social organization of the East and forecast new approaches to its stupendous problems.

A similar conference of particular interest to the United States was being organized during the year, on the initiative of 13 Latin-American delegations, on Rural Hygiene for the Americas. Mexico had invited the Conference to meet in Mexico City in a desire "to testify in a matter of vital importance to Mexico to its great interest in the technical work of the League." The United States accepted the invitation to be represented, former Surgeon General Cumming stating that it was "very keenly interested."

American unofficial co-operation was even more extensive. General Cumming, who had sat on the Health Committee for over a decade, was reappointed, and American specialists were active in nearly all the expert committees. During the year, however, the Rockefeller grant, which had greatly facilitated the rapid development of this work during the previous 14 years, came to an end.

The most active continuing work combining both official and unofficial co-operation was as regards nutrition. The Mixed Committee completed a report which the Assembly described as "the first attempt that had ever been made to carry out a scientific and impartial study of the problem of human nutrition in its various aspects." American experts contributed largely to it through Professor E. V. McCollum of Johns Hopkins, Dr. W. Sebrill, of the National Institute of Hygiene, and Professor Mary Swartz Rose of Columbia. The Government also took part through the appointment of Dr. Hazel K. Stiebeling of the Department of Agriculture to a meeting of representatives of various national nutrition committees, and of Dr. Martha M. Eliot of the Department of Labor, to a committee on the nutritional state of the child. The following were also members of various Committees: Professor C. E. A. Winslow of Yale, and Robert L. Davison of the John B. Pierce Foundation, Housing; Professor Hans Zinsser of Harvard, Prevention of Typhus; Dr. D. I. Harrison and Dr. Carl Voegtling of the National Institute of Health, Biological Standardization ; Dr. L. L. Williams of the Public Health Service, and Dr. L. W. Hackett of the Rockefeller Foundation, Malaria; Dr. H. Emerson of the American Public Health Association, International Nomenclature of Diseases; Professor J. Dill of Harvard, Physical Fitness. In addition, the National Academy of Science was named as National Agency in the United States to be consulted on various technical problems.

DRUGS

The United States continued during 1937 to be more widely associated with the League's anti-drug work than with other League activity. Since the first cautious contact in 1923, the Government has been an active participant in several confer-

ences and all Advisory Committee meetings; the Senate has ratified the 1931 Convention giving the League special administrative powers; Congress has voted funds for America's share of the common expenses; and American individuals have served in relation to the intricate machinery of international supervision created. The only gap has been non-representation at the Assembly and Council.

The United States played a leading rôle in this year's Advisory Committee, partly because its own anti-drug work gravely needs protection from abroad and partly because it was represented by one of the most experienced members of the Committee, Stuart J. Fuller of the State Department, ably assisted by Harry J. Anslinger and Bernard Wait of the Treasury. Mr. Fuller was very outspoken, citing offending nations by name, criticizing certain reports as misleading, and even threatening the loss of the American market for those not conforming to treaty requirements.

His most dramatic intervention was as to Japanese-controlled territory in China. "The province of Hopei," he said "in which Peiping, Tientsin and the so-called demilitarized zone are located, has become the seat of the world's most extensive manufacture of illicit heroin." The situation in Manchuria and Jehol, last year described as "terrifying," is now "almost beyond belief." "This is the one region in the world where the governing authority not only makes no effort to prevent the use of narcotic drugs but actually profits by the rapid increase of narcotic addiction."

Mr. Fuller's position was more difficult when he attacked the arrangements for the important conference on the control and limitation of drug cultivation. The previous Assembly had proposed two limited preliminary conferences, which Mr. Fuller feared might endanger the main Conference. He had the difficult task of reversing what the principal League authority had decided, and, though a compromise was finally reached, a further illustration was given of the inconveniences both to the United States and to others of America not being represented at all stages of discussion.

The League's day-to-day efforts to build up defenses against this nefarious traffic continued to have the fullest American co-operation. The Government transmitted its annual narcotics report required by the 1931 Convention, various Treasury decisions on enforcement and various special replies. It also submitted detailed proposals for preventing the use of ocean-going steamers for illicit traffic and for the supervision of larger sea-ports.

Finally, unofficial American co-operation played an important rôle in the League's two technical agencies for isolating the drug traffic. Herbert L. May continued as a member of both the Opium Supervisory Board and the Opium Central Board. The former drew up a statement of the world's legitimate drug requirements based on the estimates of 73 countries and 106 dependencies; the latter arived at figures of the amount of drugs actually manufactured and consumed.

SOCIAL

The most formal American co-operation with League work continued to be in the social and humanitarian field where it first started. Whatever the political objections to the League, hardly a voice has ever been raised against its efforts to improve social standards. Since 1923 the United States has co-operated actively in its work except for representation in the Assembly and the Council. This year the Government notified the League that it "desires to continue its membership" on the Social Committee, which the Council had just renewed until 1940. This followed a recent change in representation from that of "observer" to that of "full member." The representative appointed was Miss Katharine F. Lenroot of the Department of Labor, who was substituted, however, by Henry F. Hazard of the same Department. Mr. Hazard took a full part in the Committee's work, stating that, if it drew

up an active five-year program, it could rely on the full co-operation of the United States.

Mr. Hazard also participated with F. C. de Wolf of the State Department in a committee to prepare a Convention for the Suppression of Exploitation of Prostitution. This was the first time American Government representatives had taken part in this particular work and their co-operation proved useful in meeting certain difficulties which might have prevented American adhesion, particularly as to extradition and Federal and state criminal jurisdiction.

The United States was also represented in a Far Eastern Conference in Java to effect closer collaboration in combating the traffic in women, abolishing brothels, and exchanging police information. The United States had originally fully accepted the invitation to the Conference but, when informed that the Philippine Government was not particularly interested because the problem did not exist in the Islands, changed its status to that of observer in the person of Miss Anne Guthrie. The Conference reached general agreement, including the creation of a League Far Eastern Bureau on the subject.

The United States also transmitted various communications on social questions, including its annual report on Traffic in Women, a memorandum on the recreational aspects of the cinema, and a report on the principal child welfare associations. Government agencies have been meticulous and most helpful in meeting such requests.

Another question which for years has attracted keen interest amongst American women is that of the status of women. This has been discussed, often under considerable American pressure, at various League meetings. The Government transmitted to the League a detailed report prepared by the Women's Bureau of the Department of Labor, which gave a general analysis of the question in the United States and which was felt to be "of particular importance at this time because a Resolution on the status of women is before the Assembly."

INTELLECTUAL CO-OPERATION

The League's work in the vast domain of international cultural relations drew forth considerable American co-operation at a moment when an increasingly wide gulf was being opened up between liberal states where intellectual freedom is cherished and totalitarian states. The central Committee on Intellectual Co-operation continued to have the active co-operation of Professor James T. Shotwell of the Carnegie Endowment, assisted by Malcolm W. Davis. Similarly the second general Conference of 39 national committees established in various countries contained a large American delegation. The International Studies Conference, generously supported by the Rockefeller Foundation, had the fullest American participation both in the preliminary studies on "Peaceful Change" and in the actual deliberations. The Conference on Higher Education called forth a considerable group of American professors and teachers headed by G. F. Zook, president of the American Council of Education. In addition the Carnegie Endowment had a consultative relationship with the Joint Committee of Major International Associations studying the promotion of international co-operation; Thornton Wilder replaced Frederick Keppel in the work of the Committee on Arts and Letters, and Edward Morrow of the Columbia Broadcasting System participated in the Advisory Committee on League of Nations Teaching.

NEW YORK WORLD'S FAIR

The American Legation in Berne transmitted to the League an invitation from the New York World's Fair to take part in the 1939 Exhibition. "Realizing that the social, humanitarian, cultural and economic aims of the League are identical" with the Fair's theme of "building of the world of tomorrow," the Fair authorities assured the League that its participation "is most desirable and will be welcomed." The invitation was greatly appreciated as an act of courtesy and goodwill and a provisional appropriation voted in case

full study should indicate an exhibit to be practicable.

LEGAL

The United States transmitted 17 new treaties, including some not otherwise available, to the League with other non-member states, such as Brazil, for registration and publication in the League's Treaty Series. This was in accordance with the 1934 agreement for the purpose of "aiding in making the Treaty Series compiled by the League of Nations more complete and the texts of treaties with the United States more widely available in foreign countries."

WORLD COURT

The Permanent Court of International Justice, the international organization most akin to American tradition and most fully endorsed by both government and public received the least American co-operation during 1937. The special protocol establishing the basis of American membership, which has been ratified by many nations but which failed by a narrow vote to receive Senate approval in 1935, remained unacted on. Nevertheless, an American Judge, Dr. Manley O. Hudson, continued to sit on the Court in succession to John Bassett Moore, Charles Evans Hughes and Frank B. Kellogg, who had successively been elected by the other nations. Similarly, the American National Group at the old Hague Court was invited with other national groups, to make nominations to fill a vacancy on the bench and was expected to transmit its choice as it has in previous elections.

INTERNATIONAL LABOR ORGANIZATION

The United States gave convincing proof during its third year of full membership in the International Labor Office of its willingness not only to participate in the routine work towards the betterment of world labor conditions but also to take a leading part in giving direction to that work. American co-operation, including that not only of the government but equally of the workers and employers, was very active during 1937 and extended to every phase of the Organization's work. Not only were American interests widely represented in the annual Conference and the four Governing Body sessions but the World Textile Conference was held in Washington and the first steps were taken toward ratification of certain Conventions drafted by the Organization.

The chief interest centered this year, as previously, on the problem of the reduction of hours of work, which was of great interest to and drew inspiration from an American administration whose own policy was directed towards improved social conditions. There was an increasing tendency, too, to approach labor problems from the economic angle, as shown in the report on the textile industry prepared largely by Dr. Lewis Lorwin, an American who serves as Economic Adviser to the Office.

The reduction of hours of work to 40 a week was sought both generally and in individual industries. The three proposed in 1937 were textiles, printing, and chemicals. Of these the only one finally adopted was in textiles, largely because of the success of the Washington Conference and the efforts of the American delegation. Indeed, this was termed by many "an American victory."

The Washington Textile Conference represented a new departure both for the Organization as a whole and for the relations of the United States with the Organization. For the first time representatives of employers, employees and government from 27 countries reviewed the general situation in a great industry with a view to raising its social standards and improving its economic position. The Conference aimed to lay the foundation for action in an industry that spans the world and on which 40,000,000 people are dependent for their livelihood. Perhaps the outstanding result was the recognition that the industry's special problems can best be solved through the establishment

of a continuous Tripartite Committee to study the interrelation of labor and business conditions, and that improvement, particularly as regards reduction of hours of work, can be obtained by international action without jeopardizing the industry's economic structure. From the American viewpoint the Conference demonstrated to one of the leading industries that its problems are international; it also furnished the first opportunity since the United States joined the Organization to make its work better known there. The Conference was presided over by John G. Winant, American Government delegate; American employers were represented by O. Max Gardner, former Governor of North Carolina; and American workers by Emile Rieve, president of the American Federation of Hosiery Workers. President Roosevelt sent a message of welcome and later received the Conference at the White House, while Mr. Hull, Miss Perkins, Mr. Roper, Mr. Wallace, and Mr. McGrady, addressed the Conference.

The annual session in June was attended by the largest delegation which has yet represented the United States. Miss Grace Abbott, Government delegate, took an active part in the deliberations revising the Conventions on Child Labor and Minimum Wage; Otto Mallery, another Government representative, took an active part regarding the advance planning of public works, while the two employers' representatives, William Wasserman, and Arthur Paul, took a liberal viewpoint in the latter matter quite in contrast to that of the European employers. The Committee which subsequently met to study the best methods of planning public works sufficiently in advance to compensate for cyclical unemployment was presided over by Mr. Chalmers, United States representative.

The Governing Body held four sessions in 1937. The first, which arranged for a Technical Tripartite Conference of Hours of Work in the Coal Industry, was attended by Carter Goodrich for the Government, J. Howe Volkmann for the employers, and James W. Duffy, president of the Pottery Workers' Union, for the workers. The second, which took important decisions regarding the Joint Maritime Commission, was attended by Mr. Goodrich only, while the third was attended by Mr. Goodrich, Henry I. Harriman, and Matthew Woll, vice-president of the American Federation of Labor. The fourth, which approved an important Franco-American proposal for a general Convention on Reduction of Hours of Work, was attended by Dr. Isador Lubin, Mr. Dennison, and Robert Watt. During the year also the employers' group selected Mr. Harriman as one of its eight members, with Mr. Dennison as alternate, while the workers' group replaced William Green, president of the American Federation of Labor, who had not been able to attend the sessions, by Mr. Watt of the Massachusetts State Federation of Labor.

The first steps towards American ratification of Labor Office Conventions was taken during the year when President Roosevelt submitted to both Houses of Congress three Conventions and two recommendations on the recruiting of indigenous workers, reduction of hours of work in public works and annual vacation with pay. Later, the President submitted to the Senate six Conventions adopted by the Maritime session on officers' competency certificates, annual vacation with pay for seamen, shipowners' liability, sickness insurance for seamen, hours of work and manning, and minimum age of employment at sea.

The number of Americans serving on Committees of the Organization increased somewhat during the year. Appointments were made to the correspondence committees on workers' spare time, women's work, agriculture, accident prevention, unemployment insurance, employment service, and industrial hygiene, as well as to certain special committees.

Similarly, 16 Americans are on the regular staff of the office in Geneva, including John G. Winant, former chairman of the Social Security Board, as assistant director, Lewis

Lorwin as economic adviser, and Joseph Wilson Haden as librarian. Finally, the Department of Labor continued to maintain its liaison office in Geneva, Carter Goodrich returning temporarily to his post at Columbia and being replaced by W. Ellison Chalmers.

CHRONOLOGY OF INTERNATIONAL AFFAIRS

(From *The New York Times*, January 1, 1938)

THE PRESIDENT AND INTERNATIONAL ACTIVITIES

Jan. 13—The State Department warns citizens against serving in Spain, and on March 3 refuses passports to them.

Jan. 18—Anticipating his visit here, Walter Runciman, President of the Board of Trade in the British Cabinet, outlines project for an Anglo-American trade treaty.

Feb. 27—President Roosevelt receives the new French Ambassador, Georges Bonnet.

March 12—Ambassador Dodd at Berlin objects to the indecent press comments on Mayor La Guardia's characterization of Herr Hitler.

May 15—J. Borden Harriman becomes American Minister to Norway.

June 17—Japan notifies the State Department that she repudiates the 14-inch gun agreement. That Japan contemplates the construction of three 46,000-ton battleships with 16-inch guns in revealed by Hanson W. Baldwin in *The New York Times*, Dec. 11.

July 16—Secretary Hull urges restraint at both Nanking and Tokyo, and issues urgent peace for all nations in message to chancelleries. By Aug. 7 his message has been endorsed by thirty-seven nations including Japan, Italy and Germany. On Aug. 15 Secretary Hull makes a more urgent appeal at Nanking and Tokyo. "China defends herself" is the former's reply; still (Aug. 28) she invites peaceful approaches from Japan.

Aug. 12—The project of the United States to lease destroyers and obsolete cruisers to Brazil is objected to by Argentina and the project gradually fades. Still, on Oct. 6, Russia gets permission to buy battleship parts here.

Sept. 4—American, British and French consuls-general at Shanghai ask both China and Japan to cease fighting around that city.

Sept. 14—Government-owned ships are forbidden by the President to carry war material to either China or Japan; while Japan is silent, China formally protests three days later that the embargo decreed is unfair.

Sept. 20—The American Ambassador to China is summoned home.

Sept. 22—The State Department having protested against the bombing of Shanghai, now protests against the bombing of Nanking.

Sept. 23—The American Legion at New York convention elects Daniel J. Doherty of Mass. National Commander, having pledged the Legion to defend democracy, but urging the administration at Washington to avoid war.

Sept. 29—Japan in a caustic note to the State Department declines to change her military program in China.

Oct. 16—Reserving independent action, the United States accepts participation in the Nine-Power Conference, at Brussels but Japan (Oct. 27) declines to appear. At the conference (Nov. 3) Italy warns against coercing Japan; Germany offers arbitration, and (Nov. 15) the conference dissolves in mutual distrust, having mildly censured Japan for her conduct in China.

Oct. 27—The laying down of a $60,000,000 battleship celebrates Navy Day.

Nov. 14—Haitians having been slain on Dominican soil, a small international problem arises, to settle

which President Stenio Vincent of the injured republic asks the United States to join Mexico and Cuba in arbitrating.

Dec. 9—Joseph P. Kennedy, chairman of the Maritime Commission, accepts the ambassadorial post at London—Robert Worth Bingham has resigned and dies Dec. 19.

Dec. 12—An international commission headed by Dr. John Dewey exonerates Leon Trotsky from the charges made at the Moscow trials in August, 1936, and in January last.

Dec. 12–26—High tension between the chancelleries of Washington and Tokyo on account of the sinking of the American gunboat *Panay* in the Yangtze, twenty-five miles above Nanking. The President, through Secretary Hull and his Ambassador at Tokyo, personally "requests" that the Emperor be informed of the "indiscriminate bombing of American and other non-Chinese vessels on the Yangtze." Administration's reports charge a "deliberate act" with subsequent deliberate firing on the sinking vessel. Japan denies, then promises to discipline the offenders, offers indemnity with an apology, but does not guarantee immunity to foreign shipping in the Yangtze —a similar note is sent to the British Government in regard to the sinking of H.M.S. *Ladybird*.

BERLIN-ROME-TOKYO AXIS

Jan. 5—Germany and Italy reply to Franco-British notes asking an end to intervention by their nationals in Spain. The notes, also addressed to Italy, Germany, Russia and Portugal, were dispatched on Dec. 27, 1936.

Jan. 13–23—Goering-Mussolini conversations take place in Rome as to united intervention on the side of the rebels in Spain, but are officially announced to concern a revival of the four-power pact of 1933. The result is (Jan. 25) German and Italian offers to Great Britain to ban aid to rebels in Spain if suitable controls be established to prevent aid being given the Loyalist Government.

March 12—Berlin and Rome submit a substitute for the repudiated Locarno treaty: a non-aggressive pact between them with France and Belgium guaranteed by Great Britain.

April 22—Mussolini in Venice announcement declines further to guarantee the independence of Austria by force; also to support the restoration of the monarchy there. Four days later Goering for Germany discusses with Count Ciano, Italian Foreign Minister, at Rome, a modus operandi, including joint action in Spain; on May 3, at Rome the same ground is gone over with von Neurath, the German Foreign Minister. It is decided that Franco is strong enough to win in Spain, and a Mid-European alliance with Austria and Hungary is considered. On Sept. 25, the whole situation including the situation in the Mediterranean is reviewed by Hitler and Mussolini at Munich, Bavaria.

Nov. 6—Italy joins the German-Japanese anti-communist front, the effect of which can be seen in Japan's renewed activity in China and Tokyo's carelessness of British and American criticism.

LONDON-PARIS PIVOT

Jan. 2—Great Britain, having declined Mussolini's proposal for a conference of Mediterranean powers in 1924, now signs a pact to maintain the status quo in the Sea, provided France adheres and the integrity of Spain is preserved. The arrangement comes to nothing and on July 19 Great Britain warns Italy that she would fight to preserve the status quo.

Jan. 14—At the suggestion of Great Britain a bill is introduced in the French Chamber inhibiting volunteers for the Loyalist cause in Spain.

Jan. 24—France offers Germany economic co-operation provided Germany does not apply the profits to armaments.

Feb. 18—Premier Stanley Baldwin

announces a program of four elements: rearmament, closer communion with France, a new Locarno treaty and no return of the German colonies. On March 19, King Leopold of the Belgians visits London to discuss the possibilities of such a treaty.

May 17–20—The Austrian Foreign Minister, Dr. Guido Schmidt, successively visits London and Paris in search of guarantees against German aggressions; Paris advises Austria to join the Little Entente —Czechoslovakia, Rumania and Yugoslavia, with Poland as honorary member.

July 31 and Aug. 2—Personal letters are exchanged between the new British Prime Minister Neville Chamberlain, and Mussolini, which seem to lead the way to an Italo-British rapprochement.

Sept. 11—Britain and France agree to guard Mediterranean routes against the attacks of mysterious submarines, and Italy is invited to join them, but declines. Still, on Sept. 21, they recognize Italy's interests in the Sea, and conversations as to the rôle of each on patrol routes ensue.

LEAGUE OF NATIONS

Jan. 27—The League of Nations adjusts the dispute between Turkey and France over Alexandretta and fixes its status when mandated Syria shall be independent: Alexandretta is to have a separate entity.

May 24—With the opening of the ninety-seventh session of the League, the Assembly decides to postpone action in Spain until the fate of Bilbao, besieged by the Rebels, is settled; Britain is opposed to postponement; Italy is not.

Aug. 20—Mussolini informs the League that he does not insist on the recognition of Ethiopia as Italy's empire, but will withdraw support from neither Hitler nor France.

Aug. 21—A Sino-Soviet non-aggression pact is signed at Nanking.

Aug. 23—The Mandates Commission approves of the British program to divide Palestine into Zionist and Arab regions. The Spanish Government charges Italy with the sinking of four merchant ships by submarines.

Sept. 16—The League Council bunches the complaints of China against Japan and passes them on to the Far East Advisory Committee. Japan is reproved.

Sept. 20—Spain loses her seat on the Council, and Britain warns the League that non-intervention in Spain would bring the danger of a European war nearer.

Dec. 11—In a vituperative speech deriding the intelligence of the League, Mussolini, at the Palazzo Venezia, Rome, announces Italy's withdrawal from it. *Il Tevere* of the same day announces an end of the long quarrel between Italy and Yugoslavia with concessions to the latter won by M. Stojadinovitch, the Yugoslav Premier, then on a visit to Rome.

Dec. 14—A new Franco-Yugoslav commercial treaty is signed at Belgrade.

GREAT BRITAIN

Jan. 14—A new trade agreement is reached with Canada.

Feb. 11—A national defense program with an expenditure of $2,000,000,000 over five years is announced by Neville Chamberlain, Chancellor of the Exchequer, and immediately measures of defense are speeded in every department of the government, in all industries capable of being mobilized in the event of war.

Feb. 16—A naval construction program is announced entailing $1,500,000,000.

March 4—Army estimates amounting to over $500,000,000 are announced, with an air estimate of $500,000 more than that sum.

March 31—In spite of the enormous defense expenditures the current budget shows a surplus of $37,650,000. The new budget, however, announced April 20, reveals aug-

menting profits tax up to 33⅓ per cent and a basic rate of income tax at 25.

April 25 — Neville Chamberlain, Chancellor of the Exchequer, announces a $500,000,000 loan and the government is authorized to borrow in all $2,000,000,000 for rearmament.

May 12—King George VI and Queen Elizabeth are crowned at Westminster Abbey with over 1,000,000 watching the procession, in spite of the bus strike which demoralizes traffic.

May 31—In his first speech as Prime Minister Neville Chamberlain pledges unity at home and conciliation abroad.

June 3—Duke of Windsor, formerly King Edward VIII, weds Mrs. Wallis Warfield at Monts, France, with the Rev. R. Anderson Jardine performing the religious ceremony and the local mayor the civil.

June 30—The Duke of Windsor denies the charge that he hastened his father's funeral.

July 22—The House of Commons votes for the partition of Palestine and the bill goes to the Mandate Commission of the League of Nations for approval.

July 23—The new divorce bill accepting desertion, cruelty and insanity as legal causes becomes law.

July 27—*The Morning Post,* the oldest Tory daily in Britain, is purchased by Lord Camrose and is amalgamated with his *Daily Telegraph,* Oct. 1.

Nov. 22—The Duke of Windsor wins a libel suit against an author and publisher.

Nov. 23—A 21 per cent advance in business over the first ten months of 1937 as compared to the same period in 1936 is announced by the Board of Trade.

Dec. 2—The new Secretary for War, Leslie Hore-Belisha, having vastly improved the morale of the regular army and the territorials, gets rid of the old generals in the Army Council, replacing them by younger, with an average ten-year lowering of age.

CANADA

Jan. 28—Unemployment insurance, minimum wage and work hours are declared by the Privy Council in London to have been unconstitutionally legislated.

Feb. 25—The mother country obtains a preferential tariff amounting to $6,000,000 yearly.

March 17—The Premier of Ontario, Mitchell Hepburn, decrees against "sit-in" strikes—a lure to United States industries. Nevertheless, strikes, instead of industries, follow, and the Dominion Government is seriously involved with the ousting of Conservatives from the Cabinet; by June 4 the Premier of Ontario reveals Fascist proclivities, and, on Aug. 16, Premier Duplessis of Quebec emulates him by coercive measures against strikers.

FRANCE

Feb. 18—The Chamber, 385–195, discards gold clause in international contracts, but national defense loan will be paid abroad in gold.

Feb. 26—Premier Blum gets a vote of confidence, 362–211, in Chamber.

March 13—The government begins to expropriate armament concerns beginning with the Schneider-Creusot.

March 24—Premier Blum gets vote of confidence, 362–215, but with signs of radical defections from Popular Front.

April 28—Big railway merger with the government holding 8 per cent of stock—all roads are now under State control.

May 23–Nov. 1—The Paris International Exposition.

May 26—Minister of the Interior removes Jacques Donot, Mayor of St. Denis, a conservative administrator of a radical community.

June 19—Premier Blum, defeated in the Senate, is supported by majority in Chamber receiving full power to handle financial issues, but two days later his Cabinet resigns after second defeat in the Senate.

June 29—Camille Chautemps forms another Popular Front Government with M. Blum as Vice Pre-

mier; a week later a moratorium is declared on gold payments and the Bourse is closed, and a series of financial reforms with increases in taxes are introduced by the Minister of Finance, Georges Bonnet. His program published July 20 is expected to save the Treasury nearly $1,000,000,000, but by Sept. 15 the franc has fallen 29.375 to the dollar.

Sept. 23—General Skobline, a known agent of the Russian OGPU, and Miller, a White Russian, disappear from Paris, under the suspicion that the former has spirited the latter away to Leningrad.

Oct. 1—The government will use force to end "stay-in" strikes, agree MM. Chautemps and Bonnet in conference.

Nov. 16–20—The "Cagoulards" (the hooded ones), a Royalist society resembling the K.K.K., is revealed and the police raid their armories and make arrests.

GERMANY

Jan. 20—Exports to Britain gain; those to France drop.

Feb. 5—With a serious wheat and maize shortage supplies of food are purchased abroad; exports fell 9 per cent in January; in October a bumper potato crop saves the situation.

Feb. 23—A 500,000,000-mark loan is announced.

March 30—Ludendorff and Hitler make peace—estranged since the Munich revolt.

April 30—In anti-Catholic campaign 1,000 monks are placed on trial.

June 4—Helmuth Mirsch, an American citizens convicted of importing bombs, is beheaded.

July 1—The Rev. Martin Niemoller, Protestant leader against the Nazis, is arrested.

Sept. 17—The Vatican, basing its argument on the Concordat of 1933, protests against attacks on Catholicism.

Nov. 8—Hitler is warned by army chaplains of the "German Church" that his policy is disrupting the army.

ITALY

Feb. 25—In Ethiopia, Ras Desta Demtu, son-in-law of the dethroned Emperor, after an abortive attack by Ethiopians to recover Addis Ababa, is executed.

March 17—Il Duce at Tripoli promises protection to Jews and Moslems while denouncing the League and its imposition of sanctions. On May 25, his Milan paper, *Il Popolo d'Italia,* demands that Jews support Fascism or leave Italy, and, on June 18, all Fascisti are ordered to subscribe to the paper.

Oct. 14—The cost of feverish rearmament is to be met by a 10 per cent capital levy and a sales tax from 2½ to 3 per cent on purchases. [See League.]

RUSSIA

Jan. 11—The military budget shows an advance of 35.5 per cent over the preceding.

Jan. 19–30—Karl Radek and sixteen others are tried for "Trotzkism" by Moscow Supreme Court and fourteen are condemned to death with Radek and four others getting ten years' imprisonment.

April 3—Henry G. Yagoda, former OGPU head, is tried and on May 22 he and a score of alleged plotters are reported to have been executed; the purge of army chiefs begins. On June 12 eight generals are sentenced to death for treason, while two days later twenty-eight railway executives and employees are executed for sabotage. On Aug. 1 thirty Orthodox priests are placed on trial charged with treason. On Aug. 11 seventy-two more railway men are executed, and thirty-two on Aug. 27. At Irkutsk, Oct. 21, there are sixty-two executions for sabotage and espionage.

Dec. 9–14—The "Robinson" disappearance case causes a few conversations between Moscow and Washington.

Dec. 12—The first general election under the new Constitution returns a unanimous Stalin membership to the Legislature—there were no other candidates.

Dec. 19—Eight officials, including Karakhan, are executed for treason.
Dec. 27—A new purge causes the arrest of six transport executives.

SPAIN

The only important city captured by the Franco Rebels in the year has been Bilbao, which immediately caused Great Britain to open commercial relations with the rebel leader; these have been variously interpreted. Fewer than 500 square miles of territory have also been occupied and administered by the rebels, while Madrid is still in the hands of the government with headquarters at Valencia. The differences of the European chancelleries over this continued stalemate in Spain is dealt with elsewhere.

ELSEWHERE IN EUROPE

Feb. 15—In Rumania a political crisis is caused by King Carol objecting to German and Italian diplomats atttending the funeral of two Iron Guards killed fighting for Franco in Spain.
Feb. 15—Kyosti Kallio, a pro-Stalin, is elected President of Finland.
June 16—In Bulgaria an heir to the throne is born to King Boris and Queen Joanna.
Aug. 15–Sept. 15—In Yugoslavia, the acceptance of the concordat causes resentment among Orthodox Church leaders, and Ministers as well as Deputies are excommunicated, but there is greater Croatian adhesion culminating, Sept. 15, on a united Serb-Croat front revision of the Constitution.

LATIN AMERICA

Feb. 11—Eleven Roman Catholic churches in Mexico experience a "sit-in" demonstration by 25,000 communicants and the Governor of Veracruz allows them to stay, but prohibits sermons. Freedom of worship is declared by the President, March 14.
March 16—Charging non-payment of royalties, Bolivia confiscates Standard Oil property and cancels concessions.
May 30—Cuban amnesty bill pardons offenses against the State up to May 20, freeing ex-President Machado.
June 17—Constitutional guarantees are restored in Brazil.
July 31—Bolivia abandons its experiment in State socialism by making a German general (Busch) President, supplanting the Provisional President, David Toro.
Aug. 10–Sept. 15—Coups and counter-coups afflict Paraguay—for and against State socialism.
Oct. 2—Brazil, with army and navy officers organized against communism, a state of war is declared, which is considered tantamount to a Fascist state in Washington and some European chancelleries. On Dec. 3, however, President Vargas dissolves the alleged Fascist party on the authority of the new constitution, adopted Nov. 10.
Oct. 10—In Mexico, President Cardenas begins his land nationalizing program by seizing estates in San Luis Potosi and 350,000 acres leased to the Standard Oil Company of California.
Oct. 23—In Ecuador, General Enriquez, Minister of War, peacefully succeeds President Federico Paez, resigned.

PALESTINE, INDIA, EGYPT AND IRELAND

In the Mandate of Palestine the friction of Arabs against Jews continued, and the project of an ethnic-regional division was reported by the commission to the British Parliament; in India the trouble of adjusting the new constitution to Moslems and Hindus continued with Gandhi less in revolt; in Egypt the Independents were again arrayed against the King and Britain causing the latter to reinforce her military; in Ireland renewed opposition was revealed against President de Valera in the elections.

CHINA AND JAPAN

In China Chiang Kai-Shek had been returned to his home and his anti-Japan kidnapper, Chang

Hsuch-Liang, had been pardoned; in Japan the army leaders were seemingly taking the advice of the Premier Hayashi, when a couple of Japanese, Sub. Lieutenant Isao Ohyama and Seamen Yozo, invaded the Chinese airdrome in Hung-jao road and, declining to reply to the challenge of the sentry, were shot down, thereby reviving Japan's invasion of China, which, at the year-end, covers more than 1,285,069 square li of territory with the possession of the capital, Nanking.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

ACADEMY OF POLITICAL SCIENCE IN THE CITY OF NEW YORK, Fayerweather Hall, Columbia University, New York City.

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, 3457 Walnut St., Philadelphia, Pa.

AMERICAN ARBITRATION ASSOCIATION, 521 Fifth Avenue, New York City.

AMERICAN PEACE SOCIETY, 734 Jackson Place, Washington, D.C.

AMERICAN POLITICAL SCIENCE ASSOCIATION, 205 Bennett Hall, University of Pennsylvania, Philadelphia, Pa.

AMERICAN SOCIETY OF INTERNATIONAL LAW, 700 Jackson Place, N.W., Washington, D.C.

CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE, 700 Jackson Place, N.W., Washington, D.C.

COUNCIL ON FOREIGN RELATIONS, INC., 45 East 65th Street, New York City.

FOREIGN POLICY ASSN., 8 West 40th Street, New York City.

INSTITUTE OF CURRENT WORLD AFFAIRS, 522 Fifth Ave., New York City.

INTERNATIONAL REFORM FEDERATION, 134 B St., N.E., Washington, D.C.

LEAGUE OF NATIONS ASSN., 6 East 39th Street, New York City.

LEAGUE OF NATIONS UNION, 8 West 40th Street, New York City.

NATIONAL COUNCIL FOR PREVENTION OF WAR, 532 17th Street, N.W., Washington, D.C.

PEOPLE'S LOBBY, INC., 113 First St. N.E., Washington, D.C.

WOMEN'S INTERNATIONAL LEAGUE FOR PEACE AND FREEDOM, 150 Fifth Avenue, New York City.

WOMEN'S PEACE UNION, 2 Stone Street, New York City.

WORLD PEACE FOUNDATION, 40 Mount Vernon Street, Boston, Mass.

REGIONAL

AMERICAN ASIATIC ASSN., 1 Hanover Square, New York City.

AMERICAN COMMITTEE TO AID ARMENIA, 33 East 27th Street, New York City.

CHINA SOCIETY OF AMERICA, 570 Lexington Avenue, New York City.

COMMITTEE ON COOPERATION IN LATIN AMERICA, 254 Fourth Ave., New York City.

ENGLISH-SPEAKING UNION OF THE UNITED STATES, 19 West 44th St., New York City.

FAR EAST CONFERENCE, 21 West Street, New York City.

FRENCH INSTITUTE IN THE UNITED STATES, 22 East 60th Street, New York City.

FRIENDS OF IRISH FREEDOM, 132 East 16th Street, New York City.

JAPAN SOCIETY, INC., 527 Fifth Ave., New York City.

NETHERLAND-AMERICA FOUNDATION 239 East 17th St., New York City.

PAN-AMERICAN SOCIETY, INC., 67 Broad Street, New York City.

PAN-PACIFIC UNION, 1067 Alaska Street, Honolulu, Hawaii.

PART TWO

AMERICAN GOVERNMENT

DIVISION III

THE NATIONAL GOVERNMENT

FEDERAL ADMINISTRATIVE ORGANIZATION

By William M. Schuyler

Editor, *The American Year Book*

THE PRESIDENT AND VICE PRESIDENT

President.— Franklin Delano Roosevelt, of New York (Democrat). Sworn into office as President of the United States, March 4, 1933, in succession to Herbert Hoover, and inaugurated for second term Jan. 20, 1937.

Vice President.—John Nance Garner of Texas (Democrat), inaugurated Vice President of the United States, March 4, 1933, and inaugurated for a second term Jan. 20, 1937.

Secretaries to the President.—Marvin Hunter McIntyre (Kentucky); Stephen Early (Virginia); James Roosevelt (Massachusetts); Marguerite A. Le Hand.

Presidential Vacancy.—By Act of Congress, in the case of vacancy occurring in the office of President through the death or removal of both the President and Vice President, the Cabinet officers succeed to the Presidency in the order indicated in the arrangement of the following summary of the executive departments:

DEPARTMENT OF STATE

Secretary of State.—Cordell Hull.

Under Secretary of State.—Sumner Welles.

Assistant Secretaries of State.—George S. Messersmith, Francis B. Sayre, Hugh R. Wilson.

Foreign Service Personnel Board.—George S. Messersmith, chairman; Francis B. Sayre.

Legal Adviser.—Green H. Hackworth.

Economic Adviser.—Herbert Feis.

Chief Clerk and Administrative Assistant.—Edward Yardley.

Assistant to the Secretary of State.—Harry A. McBride.

Chiefs of Divisions.—

Far Eastern Affairs.—Maxwell M. Hamilton.

American Republics.—Laurence Duggan.

European Affairs.—Jay Pierrepont Moffat.

Near Eastern Affairs.— Wallace Murray.

Passport.—Ruth B. Shipley.

Current Information.—Michael J. McDermott.

Foreign Service Administration.—Nathaniel P. Davis.

Protocol.—George T. Summerlin.

International Conferences.—Richard Southgate.

Treaty.—Charles M. Barnes.

Research and Publication.—Cyril Wynne.

Trade Agreements.—Harry C. Hawkins.

Visa.—John Farr Simmons.

Communications and Records.—David A. Salmon.

Chiefs of Bureaus.—

Accounts.—Laurence C. Frank.

Translating.—Emerson B. Christie.

Chiefs of Offices.—
Arms and Munitions Control.—Joseph C. Green.
Consular Commercial.—James J. Murphy, Jr.
Historical Advisor.—Hunter Miller.
Co-ordination and Review.—Blanche Rule Halla.
Foreign Service Buildings.—Frederick Larkin.
Foreign Service Officers' Training School.—J. Klahr Huddle.

DEPARTMENT OF THE TREASURY

Secretary of the Treasury.—Henry Morgenthau, Jr.

Charged with the management of the national finances; prepares plans for the improvement of the revenue and support of the public credit; superintends collection of the moneys paid from and into the Treasury; controls construction of public buildings, coinage and printing of money, and the administration of the Coast Guard and the Public Health Service; *ex-officio* chairman of the Federal Reserve Board and of the Federal Farm Loan Board.

Under Secretary of the Treasury.—Roswell Magill.

Assistant Secretary in Charge of Public Health.—Vacant

Assistant Secretary in Charge of Customs, Coast Guard and Narcotics.—Stephen B. Gibbons.

Fiscal Assistant Secretary.—Wayne C. Taylor.

Assistants to the Secretary.—John Kieley and Henriette S. Klotz.

Administrative Assistant to the Secretary.—William H. Reynolds.

Chief Clerk.—F. A. Birgfeld.

Commissioner of the Public Debt Service.—William S. Broughton.

Commissioner of Accounts and Deposits.—E. F. Bartelt.

Chiefs of Divisions.—
Appointments.—James E. Harper.
Bookkeeping and Warrants.—Joseph Greenberg.
Deposits.—E. D. Batchelder.
Loans and Currency.—Marvin Wesley.
Paper Custody.—M. A. Emerson.
Accounts and Audit.—M. R. Loafman.
Research and Statistics.—George C. Haas.
Secret Service.—Frank J. Wilson.
Procurement.—Rear Admiral Christian Joy Peoples, Director.
Chief Disbursing Officer.—Guy F. Allen.

Comptroller of the Currency.—J. F. T. O'Connor.

Has supervision of the national banks, their examination and reports; preparation and issue of national bank circulation; redemption and destruction of national bank notes. *Ex-officio* member of the Federal Reserve Board in which capacity he draws a salary of $7,000 in addition to the salary of $5,000 attached to the office proper of Comptroller of the Currency.

Treasurer of the United States.—William A. Julian.

Charged with the receipts and disbursement of all public moneys deposited in the Treasury and Sub-Treasuries and in national banks depositories.

Director of the Bureau of the Budget.—Daniel W. Bell (acting).

Commissioner of the Bureau of Customs.—James H. Moyle.

Commissioner of the Bureau of Internal Revenue.—Guy T. Helvering.

Charged with general supervision of the collection of all internal revenue taxes, including the income tax, and the enforcement of internal revenue laws.

Federal Alcohol Administration.—W. S. Alexander, Administrator.

Director of the Bureau of the Mint.—Nellie Tayloe Ross.

Has general supervision of the mints and assay offices.

Commissioner of Narcotics.—H. J. Anslinger.

Register of the Treasury.—Edward G. Dolan.

Director of the Bureau of Engraving and Printing.—Alvin W. Hall.

Produces all the securities and similar work of the Government printed from steel plates.

Bureau of the Public Health

Service.—Thomas Parran, Surgeon General.

Charged with the framing and enforcement of regulations for the prevention of the introduction and spread of contagious disease; supervision of the quarantine service of the United States, and supervision of the marine hospitals.

National Institute of Health.—Assistant Surgeon General L. R. Thompson, Director.

Federal Board of Hospitalization.—Brigadier General Frank T. Hines, Chairman.

Coast Guard.—Rear Admiral Russell R. Waesche, Commandant.

Office of the Supervising Architect.—L. A. Simon, Supervising Architect.

Custom House.—Charles R. Lewis, Deputy Collector in Charge.

DEPARTMENT OF WAR

Secretary of War.—Harry Hines Woodring.

The Assistant Secretary of War.—Louis Johnson.

Administrative Assistant and Chief Clerk.—John W. Martyn.

Executive Assistant to the Secretary of War.—Charles W. Koester.

Clerk to the Secretary of War.—John W. Schott.

War Department General Staff.—General Malin Craig, Chief of Staff; Major General Stanley D. Embick, Deputy Chief of Staff.

Office of the Chief of Cavalry.—Major General Leon B. Kromer, Chief.

Chief of Field Artillery.—Major General Upton Birnie, Jr.

Chief of Coast Artillery.—Major General Archibald H. Sunderland.

Chief of Infantry.—Major General George A. Lynch.

Chief of Chaplains.—William R. Arnold.

The Adjutant General.—Major General Edgar T. Conley.

The Inspector General.—Major General Walter L. Reed.

The Judge Advocate General.—Major General Allen W. Gullion.

The Quartermaster General.—Major General Henry Gibbins.

Chief of Finance.—Major General Fred W. Boschen.

Surgeon General.—Major General Charles R. Reynolds.

Chief of Engineers.—Major General Julian L. Schley.

Chief of Ordnance.—Major General W. H. Tschappat.

Chief Signal Officer.—Major General J. O. Mauborgne.

Chief of the Air Corps.—Major General O. Westover.

Chief of the Bureau of Insular Affairs.—Brigadier General Charles Burnett.

Philippine Islands.—United States High Commissioner, Paul V. McNutt.

Puerto Rico Government.—Blanton Winship, Governor.

Chief of the National Guard Bureau.—Major General Albert H. Blanding.

Chief of the Chemical Warfare Service.—Major General Walter C. Baker.

The Army War College.—Major General John L. De Witt, Commandant.

The Army Industrial College.—Col. Harry B. Jordan, Director.

DEPARTMENT OF JUSTICE

Attorney General.—Homer S. Cummings.

Represents the United States in all legal matters.

Solicitor General.—Robert H. Jackson.

Assistant to the Attorney General.—Jospeh B. Keenan.

Assistant Attorneys General.—James W. Morris, Brian McMahon, Sam E. Whitaker, Carl McFarland.

Director of the Bureau of Investigation.—J. Edgar Hoover.

Executive Assistant to the Attorney General.—Ugo Carusi.

Administrative Assistant.—Thomas D. Quinn.

General Agent.—Herbert J. McClure.

Chief Clerk.—Harvey C. Donaldson.

Assistant Chief Clerk and Appointment Clerk.—E. R. Butts.

Chief of the Division of Records.—Bennett Crain (acting).

Chief of the Division of Supplies and Printing.—John F. Holland.

Librarian. — Matthew A. McKavitt.

Director of the Bureau of Prisons.—James V. Bennett.

Pardon Attorney.—Daniel M. Lyons.

POST OFFICE DEPARTMENT

Postmaster General.—James A. Farley.

Executive Assistant to the Postmaster General.—Ambrose O'Connell.

Secretary to the Postmaster General.—William J. Bray.

First Assistant Postmaster General.—William W. Howes.

Second Assistant Postmaster General.—Harllee Branch.

Third Assistant Postmaster General.—Vacant.

Fourth Assistant Postmaster General.—Smith W. Purdum.

Comptroller and Budget Officer.—William L. Slattery.

Director of Parcel Post.—John A. Brennan.

Solicitor.—Karl A. Crowley.

Chief Post Office Inspector.—Kildroy P. Aldrich.

DEPARTMENT OF THE NAVY

Secretary of the Navy.—Claude A. Swanson.

The Assistant Secretary of the Navy.—Charles Edison.

Administrative Assistant and Chief Clerk.—William D. Bergman.

Chief of Division of Records.—Charles T. Ogle.

Budget Officer.—Rear Admiral H. E. Kimmel.

Director of Shore Establishments.—Rear Admiral J. R. Defrees.

Island Governments.—

Guam.—Commander Benjamin V. McCandliss, Governor.

American Samoa.—Captain Macgillivray Milne, Governor.

Chief of Naval Operations.—Admiral William D. Leahy,

Chief of the Bureau of Navigation.—Rear Admiral Adolphus Andrews.

Chief of the Bureau of Yards and Docks.—Rear Admiral Ben Morrell.

Chief of the Bureau of Ordnance.—Rear Admiral W. R. Furlong.

Chief of the Bureau of Construction and Repair.—Rear Admiral William G. Du Bose.

Chief of the Bureau of Engineering.—Rear Admiral Harold G. Bowen, Engineer in Chief.

Chief of the Bureau of Supplies and Accounts.—Rear Admiral Charles Conard.

Chief of the Bureau of Medicine and Surgery.—Rear Admiral P. S. Rossiter.

Chief of the Bureau of Aeronautics.—Rear Admiral Arthur B. Cook.

Judge Advocate General.—Rear Admiral G. J. Rowcliff.

Naval Consulting Board.—Thomas Robins, Secretary.

Compensation Board.—Vacant.

General Board.—Rear Admirals Thomas C. Hart (Chairman), A. W. Johnson, A. P. Fairfield, W. H. Allen, A. C. Pickens, and Commander Charles A. Baker.

President of the Board of Medical Examiners.—Rear Admiral John B. Dennis.

President of the Naval Examining Board.—Rear Admiral Charles Russell Train.

President of the Naval Retiring Board.—Rear Admiral John B. Dennis.

Naval Dispensary.—Captain Benjamin H. Dorsey, Medical Corps.

Navy Yard and Station, Washington, D.C.—Rear Admiral George Pettengill, Commandant.

Naval Medical Center.—Rear Admiral Charles S. Butler, commanding officer.

Naval Medical School.—Captain Harold W. Smith, commanding officer.

Naval Hospital.—Captain George C. Thomas, commanding officer.

Attendance on Officers.—Commanders John L. Frazer, Jr. and Guy B. McArthur, and Lieut. Commander Wendell P. Blake.

President of the Board for Examination of Medical Officers.—Captain Harold W. Smith.

President of the Board of Examination of Dental Officers.—Captain Harold W. Smith.

Headquarters Marine Corps.—Major General Thomas Holcomb, Commandant.

Naval Examining Board (Marine Corps).—Brigadier General Randolph C. Berkeley, President.

Marine Barracks.—Colonel Joseph C. Fegan, commanding.

DEPARTMENT OF THE INTERIOR

Secretary of the Interior.—Harold L. Ickes.

Charged with pensions, public lands, Indian Affairs, geological surveys, reclamation of arid lands, and mines.

Under Secretary.—Charles West.

First Assistant Secretary.—Ebert K. Burlew.

Assistant Secretary.—Oscar L. Chapman.

Administrative Assistant and Budget Officer.—Vacant.

Chief Clerk.—Floyd E. Dotson.

Solicitor.—Nathan R. Margold.

Chief of Division of Classification.—John Harvey.

Commissioner of the General Land Office.—Fred W. Johnson.

Commissioner of the Bureau of Indian Affairs.—John Collier

Commissioner of the Office of Education.—John W. Studebaker.

Director of the Geological Survey.—W. C. Mendenhall.

Commissioner of the Bureau of Reclamation.—John C. Page.

Director of the National Park Service.—Arno B. Cammerer.

Director of the Bureau of Mines.—John W. Finch.

Territorial Officials.—

Alaska.—John W. Troy, Governor.

Hawaii.—Joseph B. Poindexter, Governor.

Virgin Islands.—Lawrence W. Cramer, Governor.

Puerto Rico.—Blanton Winship, Governor.

The Alaska Railroad.—Otto F. Ohlson, General Manager.

Oil Administration.—Harold L. Ickes, Secretary of the Interior, Administrator.

DEPARTMENT OF AGRICULTURE

Secretary of Agriculture.—Henry A. Wallace.

Under Secretary.—M. L. Wilson.

Assistant Secretary.—Harry Brown.

Assistants to the Secretary.—Paul H. Appleby, James D. Le Cron, R. M. Evans.

Agricultural Adjustment Administration.—H. R. Tolley, Administrator.

Director of Extension Work.—C. W. Warburton.

Director of Research.—James T. Jardine.

Director of Personnel.—W. W. Stockberger.

Director of Information.—Milton S. Eisenhower.

Director of Finance and Budget Officer.—W. A. Jump.

Solicitor.—Mastin G. White.

Librarian.—Claribel R. Barnett.

Office of Experiment Stations.—James T. Jardine, Chief.

Weather Bureau.—Willis R. Gregg, Chief.

Bureau of Animal Industry.—John R. Mohler, Chief.

Bureau of Dairy Industry.—O. E. Reed, Chief.

Bureau of Plant Industry.—Frederick D. Richey, Chief.

Forest Service.—F. A. Silcox, Chief.

Bureau of Chemistry and Soils.—Henry G. Knight, Chief.

Bureau of Entomology and Plant Quarantine.—Lee A. Strong, Chief.

Bureau of Biological Survey.—Ira N. Gabrielson, Chief.

Bureau of Public Roads.—Thomas H. MacDonald, Chief.

Bureau of Agricultural Economics.—Albert G. Black, Chief.

Bureau of Agricultural Engineering.—S. H. McCrory, Chief.

Bureau of Home Economics.—Louise Stanley, Chief.

Commodity Exchange Administration.—J. W. T. Duvel, Chief.

Food and Drug Administration.—W. G. Campbell, Chief.

Soil Conservation Service.—H. H. Bennett, Chief.

Farm Security Administration.—Will W. Alexander, Administrator.

Economic Adviser.—Mordecai Ezekiel.

DEPARTMENT OF COMMERCE

Secretary of Commerce.—Daniel C. Roper.

Assistant Secretaries.—Ernest G. Draper, J. M. Johnson.

Administrative Assistant to the Secretary.—Malcolm Kerlin.

Solicitor.—South Trimble, Jr.

Chief Clerk and Superintendent.—E. W. Libbey.

Chief of Division of Accounts.—Charles E. Molster.

Chief of Division of Personnel.—Edward J. Gardner.

Chief of Division of Publications.—Thomas F. McKeon.

Chief of Division of Purchases and Sales.—Walter S. Erwin.

Librarian.—Charlotte L. Carmody.

Director of Air Commerce.—Fred D. Fagg.

Director of the Bureau of Census.—William L. Austin.

Director of the Bureau of Foreign and Domestic Commerce.—Alexander V. Dye.

Director of the Bureau of Standards.—Lyman J. Briggs.

Commissioner of the Bureau of Fisheries.—Frank T. Bell.

Commissioner of the Bureau of Lighthouses.—Harold D. King.

Director of the Coast and Geodetic Survey.—Vacant.

Director of the Bureau of Marine Inspection and Navigation.—Commander Richard S. Field.

Commissioner of the Patent Office.—Conway P. Coe.

DEPARTMENT OF LABOR

Secretary of Labor.—Frances Perkins.

Charged with the duty of fostering, promoting and developing the welfare of the wage earners of the United States and also working towards a solution of the labor problems.

The Assistant Secretary.—Vacant.

Second Assistant Secretary.—Vacant.

Assistant to the Secretary.—Richard Saunders.

Special Assistant to the Secretary.—Mary La Dame.

Solicitor.—Gerard D. Reilly.

Chief Clerk.—Samuel J. Gompers.

Director of Conciliation.—John R. Steelman.

Director of Labor Standards.—Verne A. Zimmer.

Commissioner of Labor Statistics.—Isador Lubin.

Commissioner of Immigration and Naturalization.—James L. Houghteling.

Chief of the Children's Bureau.—Katharine F. Lenroot.

Director of the Women's Bureau.—Mary Anderson.

United States Employment Service.—W. Frank Persons, Director.

MISCELLANEOUS EXECUTIVE SERVICES

Civil Service Commission.—Harry B. Mitchell, President; Mrs. Lucille F. McMillin, Samuel H. Ordway, Jr.

Interstate Commerce Commission.—Carroll Miller, Chairman; Balthasar H. Meyer, Clyde B. Aitchison, Joseph B. Eastman, Frank McManamy, Claude R. Porter, William E. Lee, Charles D. Mahaffie, Walter M. W. Splawn, Marion M. Caskie, John L. Rogers.

United States Employees' Compensation Commission.—Mrs. Jewell W. Swofford, Chairman; John M. Morin, John J. Keegan.

General Accounting Office.—Vacant.

United States Railroad Administration.—Henry Morgenthau, Jr., Secretary of the Treasury, Director General.

Federal Reserve Board.—Marriner S. Eccles, Chairman; Ronald Ramson, Vice Chairman; M. S. Szymczak, John McKee, Chester C. Davis.

Federal Trade Commission.—Garland S. Ferguson, Jr., Chairman; Ewin L. Davis, R. E. Freer, W. A. Ayres, Otis B. Johnson, Secretary.

United States Tariff Commission.—Raymond B. Stevens, Chairman; Henry F. Grady, Vice Chair-

man; Oscar B. Ryder, Edgar B. Brossard, E. Dana Duran, A. Manuel Fox, Sidney Morgan, Secretary.

United States Board of Tax Appeals.—C. Rogers Arundell, Chairman.

Federal Power Commission.—Clyde L. Geavey, Acting Chairman; Basil Manly, Claude L. Draper, John W. Scott.

Federal Home Loan Bank Board.—John A. Fahey, Chairman.

Federal Emergency Administration of Public Works.—Harold L. Ickes, Administrator.

Federal Communications Commission.—Frank R. McNinch, Chairman.

Federal Housing Administration.—Stewart McDonald, Administrator.

Veterans' Administration.—Brigadier General Frank T. Hines, Administrator; Omer W. Clark, Assistant Administrator, Pensions; Bynum K. Cash. Director of National Homes Service.

Federal Board for Vocational Education.—Frances Perkins, Chairman.

National Mediation Board.—James W. Carmalt, Chairman.

United States Maritime Commission.—Joseph P. Kennedy, Chairman.

National Advisory Committee for Aeronautics.—Dr. Joseph S. Ames, Chairman.

Board of Surveys and Maps of the Federal Government.—Col. W. T. Hannum, Chairman.

The Commission of Fine Arts.—Gilmore D. Clark, Chairman.

Reconstruction Finance Corporation.—Jesse H. Jones, Chairman.

Smithsonian Institution.—

Established 1846 under the terms of the will of James Smithson for the "increase and diffusion of knowledge among men." The former aim is accomplished by the promoting of original, scientific research, and the latter by publications and lectures. The affairs of the institution are managed by a Board of Regents which co-operates with the Government and with National scientific bodies. Under the direction of the Institution are the National Museum, charged with preserving and utilizing objects of art and ethnological, geological and mineralogical collections belonging to the United States; Bureau of American Ethnology, National Gallery of Art, Freer Gallery of Art, National Zoological Park, Astrophysical Observatory, and the Regional Bureau for the United States International Catalogue of Scientific Literatures.

Secretary.—C. G. Abbott.

National Academy of Sciences.—Frank R. Lillie, President; Arthur L. Day, Vice President; Frederick E. Wright, Home Secretary; L. J. Henderson, Foreign Secretary; Ludvig Hektoen, Chairman of the National Research Council.

Pan-American Union.—L. S. Rowe, Director General.

American National Red Cross.—Cary T. Grayson, Chairman.

Farm Credit Administration.—W. I. Myers, Governor.

Federal Co-ordinator of Transportation.—Joseph B. Eastman.

Federal Emergency Relief Administration.—Harry L. Hopkins, Administrator.

Securities and Exchange Commission.—William O. Douglas, Chairman.

Tennessee Valley Authority.—Arthur E. Morgan, Chairman; H. A. Morgan, David E. Lilienthal, directors.

National Youth Administration.—Aubrey Williams, Executive Director.

Federal Deposit Insurance Corporation.—Leo T. Crowley, Chairman.

Commodity Credit Corporation.—Lynn P. Talley, President.

National Labor Relations Board.—J. Warren Madden, Chairman.

Social Security Board.—Arthur J. Altmeyer, Chairman.

The National Archives.—R. D. W. Connor, Archivist.

MEMBERS OF THE SENATE

COMPILED FROM THE CONGRESSIONAL DIRECTORY, YEAR, 1938

(Dates show beginning of service in the Senate. Names of Republicans are in Roman type; those of Democrats in *Italic;* Farmer-Labor in ROMAN CAPS; Progressives in SMALL CAPS.)

ALABAMA

John H. Bankhead, 2d (1931).
Lister Hill (1938)

ARIZONA

Henry F. Ashurst (1912).
Carl Hayden (1927).

ARKANSAS

H. W. Caraway (1931).
John E. Miller (1937).

CALIFORNIA

Hiram W. Johnson (1917).
William G. McAdoo (1933).

COLORADO

Alva B. Adams (1933).
Edwin C. Johnson (1936).

CONNECTICUT

Augustine Lonergan (1933).
Francis T. Maloney (1935).

DELAWARE

John G. Townsend, Jr. (1929).
James H. Hughes (1936).

FLORIDA

Charles O. Andrews (1936).
Claude Pepper (1936).

GEORGIA

Walter F. George (1922).
Richard B. Russell, Jr. (1933).

IDAHO

William E. Borah (1907).
James P. Pope (1933).

ILLINOIS

J. Hamilton Lewis (1931).
William H. Dieterich (1933).

INDIANA

Frederick Van Nuys (1933).
Sherman Minton (1935).

IOWA

Guy M. Gillette (1936).
Clyde L. Herring (1936).

KANSAS

Arthur Capper (1919).
George McGill (1931).

KENTUCKY

Alben W. Barkley (1927).
M. M. Logan (1931).

LOUISIANA

John H. Overton (1933).
Allen J. Ellender (1936).

MAINE

Frederick Hale (1917).
Wallace H. White, Jr. (1931).

MARYLAND

Millard E. Tydings (1927).
George L. Radcliffe (1935).

MASSACHUSETTS

David I. Walsh (1926).
Henry Cabot Lodge, Jr. (1936).

MICHIGAN

Arthur H. Vandenberg (1928).
Prentice M. Brown (1936).

MINNESOTA

HENRIK SHIPSTEAD (1923).
ERNEST LUNDEEN (1936).

MISSISSIPPI

Pat Harrison (1919).
Theodore G. Bilbo (1935).

MISSOURI

Bennett C. Clark (1933).
Harry S. Truman (1935).

MONTANA

Burton K. Wheeler (1923).
James E. Murray (1935).

NEBRASKA

George W. Norris (1913).
Edward R. Burke (1935).

NEVADA

Key Pittman (1913).
Patrick A. McCarran (1932).

NEW HAMPSHIRE

Fred H. Brown (1933).
H. Styles Bridges (1936).

NEW JERSEY

Arthur H. Moore (1935).
William H. Smathers (1936).

NEW MEXICO

Carl A. Hatch (1934).
Dennis Chavez (1935).

NEW YORK

Royal S. Copeland (1923).
Robert F. Wagner (1927).

NORTH CAROLINA

Josiah W. Bailey (1931).
Robert R. Reynolds (1932).

NORTH DAKOTA

Lynn J. Frazier (1923).
Gerald P. Nye (1925).

OHIO

Robert J. Bulkley (1931).
Vic Donahey (1935).

OKLAHOMA

Elmer Thomas (1927).
Josh Lee (1936).

OREGON

Charles L. McNary (1918)
Frederick Steiwer (1927).

PENNSYLVANIA

James J. Davis (1931).
Joseph F. Guffey (1935).

RHODE ISLAND

Peter G. Gerry (1935).
Theodore F. Green (1936).

SOUTH CAROLINA

Ellison D. Smith (1909).
James F. Byrnes (1931).

SOUTH DAKOTA

William J. Bulow (1931).
Herbert E. Hitchcock (1936).

TENNESSEE

Kenneth McKellar (1917).
George L. Berry (1937).

TEXAS

Morris Sheppard (1913).
Tom Connally (1929).

UTAH

William H. King (1917).
Elbert D. Thomas (1933).

VERMONT

Warren R. Austin (1931).
Ernest W. Gibson (1933).

VIRGINIA

Carter Glass (1920).
Harry F. Byrd (1933).

WASHINGTON

Homer T. Bone (1933).
Lewis B. Schwellenbach (1935).

WEST VIRGINIA

Matthew N. Neely (1931).
Rush D. Holt (1935).

WISCONSIN

ROBERT M. LA FOLLETTE, JR. (1925).
F. Ryan Duffy (1933)

WYOMING

Joseph C. O'Mahoney (1933).
H. H. Schwartz (1936).

MEMBERS OF THE HOUSE OF REPRESENTATIVES

COMPILED FROM THE CONGRESSIONAL DIRECTORY, YEAR, 1938

(Dates show beginning of service in the House. Names of Republicans are in Roman type; those of Democrats in *Italic;* Farmer Labor in ROMAN CAPS; Progressives in SMALL CAPS.)

ALABAMA

1. *Frank W. Boykin* (1935).
2. Vacant.
3. *Henry B. Steagall* (1914).
4. *Sam Hobbs* (1935).
5. *Joe Starnes* (1935).
6. *Pete Jarman* (1936).
7. *William B. Bankhead* (1917).
8. *John J. Sparkman* (1936).
9. *Luther Patrick* (1936).

ARIZONA

At Large—*John R. Murdock* (1936).

ARKANSAS

1. *William J. Driver* (1921).
2. Vacant.
3. *Claude A. Fuller* (1929).
4. *Ben Cravens* (1933).
5. *David D. Terry* (1934).
6. *John L. McClellan* (1935).
7. *Wade H. Kitchens* (1936).

CALIFORNIA

1. *Clarence F. Lea* (1917).
2. Harry L. Englebright (1926).
3. *Frank H. Buck* (1933).
4. FRANK R. HAVENNER (1936).
5. Richard J. Welch (1925).
6. Albert E. Carter (1925).
7. *John H. Tolan* (1935).
8. *John J. McGrath* (1933).
9. Bertrand W. Gearhart (1935).
10. *Alfred J. Elliott* (1937).
11. *John S. McGroarty* (1935).
12. *Jerry Voorhis* (1936).
13. *Charles Kramer* (1933).
14. *Thomas F. Ford* (1933).
15. *John M. Costello* (1935).
16. *John F. Dockweiler* (1933).
17. *Charles J. Colden* (1933).
18. *Byron N. Scott* (1935).
19. *Harry R. Sheppard* (1936).
20. *Ed. V. Izac* (1936).

COLORADO

1. *Lawrence Lewis* (1933).
2. *Fred Cummings* (1933).
3. *John A. Martin* (1933).
4. *Edward T. Taylor* (1909).

CONNECTICUT

At Large—*William M. Citron* (1935).
1. *Herman P. Kopplemann* (1933).
2. *William J. Fitzgerald* (1936).
3. *James A. Shanley* (1935).
4. *Alfred N. Phillips, Jr.* (1936).
5. *J. Joseph Smith* (1935).

DELAWARE

At Large—*William F. Allen* (1936).

FLORIDA

1. *James H. Peterson* (1933).
2. *Robert A. Green* (1925).
3. *Millard F. Caldwell* (1933).
4. *J. Mark Wilcox* (1935).
5. *Joe Hendricks* (1936).

GEORGIA

1. *Hugh Peterson* (1935).
2. *E. E. Cox* (1925).
3. *Stephen Pace* (1936).
4. *Emmett M. Owen* (1933).
5. *Robert Ramspeck* (1929).
6. *Carl Vinson* (1914).
7. *Malcolm C. Tarver* (1927).
8. *Braswell D. Deen* (1933).
9. *B. Frank Whelchel* (1935).
10. *Paul Brown* (1933).

IDAHO

1. *Compton I. White* (1933).
2. *D. Worth Clark* (1935).

ILLINOIS

At Large—*Edwin Van M. Champion* (1936).
Lewis M. Long (1936).
1. *Arthur W. Mitchell* (1935).
2. *Raymond S. McKeough* (1935).
3. *Edward A. Kelly* (1931).
4. *Harry P. Beam* (1931).
5. *Adolph J. Sabath* (1907).
6. *Thomas J. O'Brien* (1933).
7. *Leonard W. Schuetz* (1931).
8. *Leo Kocialkowski* (1933).
9. *James McAndrews* (1935).
10. Ralph E. Church (1935).
11. Chauncey W. Reed (1935).
12. Noah M. Mason (1936).
13. Leo E. Allen (1933).
14. *Chester Thompson* (1933).
15. *Lewis L. Boyer* (1936).
16. Everett M. Dirksen (1933).
17. Leslie C. Arends (1935).
18. *James A. Meeks* (1933).
19. *Hugh M. Rigney* (1936).
20. *Scott W. Lucas* (1935).
21. *Frank W. Fries* (1936).
22. *Edwin M. Schaefer* (1933).
23. *Laurence F. Arnold* (1936).
24. *Claude V. Parsons* (1930).
25. *Kent E. Keller* (1931).

INDIANA

1. *William T. Schulte* (1933).
2. Charles A. Halleck (1935).
3. *Samuel B. Pettengill* (1931).
4. *James I. Farley* (1933).

5. *Glenn Griswold* (1931).
6. *Virginia E. Jenckes* (1933).
7. *Arthur H. Greenwood* (1933).
8. *John W. Boehne, Jr.* (1933).
9. *Eugene B. Crow* (1931).
10. *Finly H. Gray* (1933).
11. *William H. Larrabee* (1931).
12. *Louis Ludlow* (1929).

IOWA

1. *Edward C. Eicher* (1933).
2. *William S. Jacobson* (1936).
3. John W. Gwynne (1935).
4. *Fred Biermann* (1933).
5. Lloyd Thurston (1933).
6. Cassius C. Dowell (1936).
7. *Otha D. Wearin* (1933).
8. *Fred C. Gilchrist* (1931).
9. *Vincent F. Harrington* (1936).

KANSAS

1. W. P. Lambertson (1929).
2. U. S. Guyer (1926).
3. *Edward W. Patterson* (1935).
4. Edward H. Rees (1936).
5. *John M. Houston* (1935).
6. Frank Carlson (1935).
7. Clifford R. Hope (1926).

KENTUCKY

1. Noble J. Gregory (1936).
2. *Beverly M. Vincent* (1937).
3. *Emmet O'Neil* (1935).
4. *Edward W. Creal* (1935).
5. *Brent Spence* (1931).
6. *Virgil Chapman* (1931).
7. *Andrew J. May* (1931).
8. *Fred M. Vinson* (1931).
9. John M. Robsion (1935).

LOUISIANA

1. *Joachim O. Fernandez* (1931).
2. *Paul H. Maloney* (1931).
3. *Robert L. Mouton* (1936).
4. *Overton Brooks* (1936).
5. *Newt V. Mills* (1936).
6. *John K. Griffith* (1936).
7. *R. L. De Rouen* (1927).
8. *A. Leonard Allen* (1936).

MAINE

1. James C. Oliver (1936).
2. Clyde H. Smith (1936).
3. Ralph O. Brewster (1935).

MARYLAND

1. *T. A. Goldsborough* (1921).
2. *Wm. P. Cole, Jr.* (1931).
3. *V. L. Palmisano* (1927).
4. *Ambrose J. Kennedy* (1932).
5. *S. W. Gambrill* (1924).
6. *David J. Lewis* (1931).

MASSACHUSETTS

1. A. T. Treadway (1913).
2. Charles R. Clason (1936).
3. *Joseph E. Casey* (1935).
4. Pehr G. Holmes (1931).
5. Edith N. Rogers (1925).
6. George J. Bates (1936).
7. *Lawrence J. Connery* (1937).
8. *Arthur D. Healey* (1933).
9. Robert Luce (1936).
10. G. H. Tinkham (1915).
11. *Thomas A. Flaherty* (1937).
12. *J. W. McCormack* (1928).
13. R. B. Wigglesworth (1928).
14. J. W. Martin, Jr. (1925).
15. Charles L. Gifford (1922).

MICHIGAN

1. *George G. Sadowski* (1933).
2. Earl C. Michener (1935).
3. Paul W. Shafer (1936).
4. Clare E. Hoffman (1935).
5. Carl E. Mapes (1913).
6. *Andrew J. Transue* (1936).
7. Jesse P. Wolcott (1931).
8. Fred L. Crawford (1935).
9. Albert J. Engel (1935).
10. Roy O. Woodruff (1921).
11. *John Luecke* (1936).
12. *Frank E. Hook* (1935).
13. *George D. O'Brien* (1936).
14. *Louis C. Rabaut* (1935).
15. *John D. Dingell* (1933).
16. *John Lesinski* (1933).
17. George A. Dondero (1933).

MINNESOTA

1. August H. Andresen (1935).
2. *Elmer J. Ryan* (1935).
3. HENRY G. TEIGAN (1936).
4. Melvin J. Mass (1935).
5. DEWEY W. JOHNSON (1936).
6. Harold Knutson (1917).
7. PAUL J. KVALE (1923).
8. JOHN T. BERNARD (1936).
9. RICHARD T. BUCKLER (1935).

MISSISSIPPI

1. *John E. Rankin* (1921).
2. *Wall Doxey* (1929).
3. *W. M. Whittington* (1925).
4. *A. L. Ford* (1935).
5. *Ross A. Collins* (1936).
6. *William M. Colmer* (1933).
7. *Dan R. McGehee* (1935).

MISSOURI

1. *M. A. Romjue* (1923).
2. *William J. Nelson* (1935).
3. *Richard M. Duncan* (1933).
4. *Charles J. Bell* (1935).
5. *Joseph B. Shannon* (1931).
6. *Reuben T. Wood* (1933).
7. Dewey Short (1935).
8. *Clyde Williams* (1931).
9. *Clarence Cannon* (1923).
10. *Orville Zimmerman* (1935).
11. *Thomas C. Hennings, Jr.* (1935).
12. *C. Arthur Anderson* (1936).
13. *John J. Cochran* (1927).

MONTANA

1. *Jerry J. O'Connell* (1936).
2. *James F. O'Connor* (1936).

NEBRASKA

1. *Harry C. Luckey* (1935).
2. *Charles F. McLaughlin* (1935).
3. Karl Stefan (1935).
4. *Charles G. Binderup* (1935).
5. *Harry B. Coffee* (1935).

NEVADA

At Large—*James G. Scrugham* (1933).

NEW HAMPSHIRE

1. Arthur B. Jenks (1936).
2. Charles W. Tobey (1933).

NEW JERSEY

1. C. A. Wolverton (1926).
2. *Elmer H. Wene* (1936).
3. *William H. Sutphin* (1931).
4. D. Lane Powers (1933).
5. Charles A. Eaton (1925).
6. Donald H. McLean (1933).
7. J. Parnell Thomas (1936).
8. George N. Seger (1923).
9. *Edward A. Kenney* (1933).
10. F. A. Hartley, Jr. (1929).
11. *Edward L. O'Neil* (1936).
12. *Frank W. Towey, Jr.* (1936).
13. *Mary T. Norton* (1925).
14. *Edward J. Hart* (1935).

NEW MEXICO

At Large—*John J. Dempsey* (1935).

NEW YORK

At Large—*Matthew J. Merritt* (1935).
Caroline O'Day (1935).
1. Robert L. Bacon (1923).
2. *W. B. Barry* (1935).

3. *Joseph L. Pfeifer* (1935).
4. *Thomas H. Cullen* (1919).
5. *Marcellus H. Evans* (1935).
6. *Andrew L. Somers* (1925).
7. *John J. Delaney* (1931).
8. *Donald L. O'Toole* (1936).
9. *Eugene J. Keogh* (1936).
10. *Emanuel Celler* (1923).
11. *James A. O'Leary* (1935).
12. *Samuel Dickstein* (1923).
13. *C. D. Sullivan* (1917).
14. *W. I. Sirovich* (1927).
15. *John J. Boylan* (1923).
16. *John O'Connor* (1923).
17. Bruce Barton (1937).
18. *M. J. Kennedy* (1930).
19. *Sol Bloom* (1923).
20. *James J. Lanzetta* (1936).
21. *J. A. Gavagan* (1929).
22. *Edward W. Curley* (1936).
23. *Charles A. Buckley* (1935).
24. *J. M. Fitzpatrick* (1926).
25. Ralph A. Gamble (1937).
26. Hamilton Fish (1920).
27. Lewis K. Rockefeller (1937).
28. *William T. Byrne* (1936).
29. E. Harold Cluett (1936).
30. Frank Crowther (1919).
31. Bertrand H. Snell (1915).
32. Francis D. Culkin (1928).
33. Fred J. Douglas (1936).
34. Bert Lord (1935).
35. C. E. Hancock (1927).
36. John Taber (1923).
37. W. Sterling Cole (1935).
38. *George B. Kelly* (1936).
39. James W. Wadsworth (1933).
40. Walter G. Andrews (1931).
41. *Alfred F. Beiter* (1933).
42. *James M. Mead* (1919).
43. Daniel A. Reed (1919).

NORTH CAROLINA

1. *Lindsay C. Warren* (1925).
2. *John H. Kerr* (1923).
3. *Graham A. Barden* (1935).
4. *Harold D. Cooley* (1935).
5. *Franklin W. Hancock, Jr.* (1930).
6. *William B. Umstead* (1933).
7. *J. Bayard Clark* (1929).
8. *John W. Lambeth* (1931).
9. *R. L. Doughton* (1911).
10. *A. L. Bulwinkle* (1931).
11. *Zebulon Weaver* (1931).

NORTH DAKOTA

At Large—Usher L. Burdick (1935).
William Lemke (1933).

OHIO

At Large—
John McSweeney (1936).
Harold G. Mosier (1936).
1. *Joseph A. Dixon* (1936).
2. *Herbert S. Bigelow* (1936).
3. *Byron B. Harlan* (1931).
4. Vacant.
5. *Frank C. Kniffin* (1931).
6. *James G. Polk* (1931).
7. *Arthur W. Alseshire* (1936).
8. *Brooks Fletcher* (1933).
9. *John F. Hunter* (1936).
10. T. A. Jenkins (1925).
11. *Harold K. Claypool* (1936).
12. *Arthur P. Lamneck* (1931).
13. Dudley A. White (1936).
14. *Dow W. Harter* (1933).
15. *Robert T. Secrest* (1933).
16. *William R. Thom* (1933).
17. *William A. Ashbrook* (1935).
18. *Lawrence E. Imhoff* (1933).
19. *Michael J. Kirwan* (1936).
20. *Martin L. Sweeney* (1931).
21. *Robert Crosser* (1923).
22. *Anthony A. Fleger* (1936).

OKLAHOMA

At Large—*Will Rogers* (1933).
1. *Wesley E. Disney* (1931).
2. *Jack Nichols* (1935).
3. *Wilburn Cartwright* (1927).
4. *Lyle H. Boren* (1936).
5. *Gomer Smith* (1937).
6. *Jed Johnson* (1926).
7. *Sam C. Massingale* (1935).
8. *Phil Ferguson* (1935)

OREGON

1. James W. Mott (1933).
2. *Walter M. Pierce* (1933).
3. *Nan W. Honeyman* (1936).

PENNSYLVANIA

1. *Leon Sacks* (1936).
2. *James P. McGranery* (1936).
3. *Michael J. Bradley* (1936).
4. *John B. Daly* (1935).
5. *Frank J. G. Dorsey* (1935).
6. *Michael J. Stack* (1935).
7. *Ira W. Drew* (1936).
8. James Wolfenden (1928).
9. *Oliver W. Frey* (1933).
10. J. R. Kinzer (1930).
11. *Patrick J. Boland* (1931).
12. *J. Harold Flannery* (1936).
13. *James H. Gildea* (1935).
14. *Guy L. Moser* (1936).
15. Albert G. Rutherford (1936).
16. Robert F. Rich (1930).
17. J. William Ditter (1933).
18. Richard M. Simpson (1937).
19. *Guy J. Swope* (1936).
20. Benjamin Jarrett (1936).
21. *Francis E. Walter* (1933).
22. *Harry L. Haines* (1931).
23. *Don Gingery* (1935).
24. *J. Buell Snyder* (1933).
25. *Charles I. Faddis* (1933).
26. *Charles R. Eckert* (1935).
27. *Joseph Gray* (1935).
28. *Robert G. Allen* (1936).
29. *Charles N. Crosby* (1933).
30. *Peter J. De Muth* (1936).
31. *James L. Quinn* (1935).
32. *Herman P. Eberharter* (1936).
33. *Henry Ellenbogen* (1933).
34. *Matthew A. Dunn* (1933).

RHODE ISLAND

1. *Aime J. Forand* (1936).
2. *John M. O'Connell* (1933).

SOUTH CAROLINA

1. *T. S. McMillan* (1925).
2. *H. P. Fulmer* (1921).
3. *John C. Taylor* (1933).
4. *G. Heyward Mahon, Jr.* (1936).
5. *James P. Richards* (1933).
6. *Allard H. Gasque* (1928).

SOUTH DAKOTA

1. *Fred H. Hildebrandt* (1933).
2. Francis H. Case (1936).

TENNESSEE

1. B. Carroll Reece (1933).
2. J. Will Taylor (1919).
3. *S. D. McReynolds* (1923).
4. *John R. Mitchell* (1931).
5. *Richard M. Atkinson* (1936).
6. *Clarence W. Turner* (1933).
7. *Herron Pearson* (1935).
8. *Jere Cooper* (1929).
9. *Walter Chandler* (1935).

TEXAS

1. *Wright Patman* (1929).
2. *Martin Dies* (1931).
3. *Morgan G. Sanders* (1921).
4. *Sam Rayburn* (1913).
5. *H. W. Sumners* (1913).
6. *Luther A. Johnson* (1923).
7. *Nat Patton* (1935).
8. *Albert Thomas* (1936).
9. *J. J. Mansfield* (1917).
10. *Lyndon B. Johnson* (1937).

11. *William R. Poage* (1936).
12. *Fritz G. Lanham* (1919).
13. *William D. McFarlane* (1933).
14. *Richard M. Kleberg* (1931).
15. *Milton H. West* (1933).
16. *Robert E. Thomason* (1931).
17. *Clyde L. Garrett* (1936).
18. *Marvin Jones* (1917).
19. *George H. Mahon* (1935).
20. *Maury Maverick* (1935).
21. *Charles L. South* (1935).

UTAH

1. *Abe Murdock* (1933).
2. *J. W. Robinson* (1933).

VERMONT

At Large—Charles A. Plumley (1935).

VIRGINIA

1. *Schuyler O. Bland* (1918).
2. *Norman R. Hamilton* (1936).
3. *Dave E. Satterfield, Jr.* (1937).
4. *Patrick H. Drewry* (1920).
5. *Thomas G. Burch* (1931).
6. *C. A. Woodrum* (1923).
7. *A. Willis Robertson* (1933).
8. *Howard W. Smith* (1931).
9. *John W. Flannagan, Jr.* (1931).

WASHINGTON

1. *Warren G. Magnuson* (1936).
2. *Monrad C. Wallgren* (1933).
3. *Martin F. Smith* (1933).
4. *Knute Hill* (1933).
5. *Charles H. Leavy* (1936).
6. *John M. Coffee* (1936).

WEST VIRGINIA

1. *Robert L. Ramsey* (1933).
2. *Jennings Randolph* (1933).
3. *Andrew Edmiston* (1933).
4. *George W. Johnson* (1933).
5. *John Kee* (1933).
6. *Joe L. Smith* (1929).

WISCONSIN

1. THOMAS R. AMLIE (1935).
2. HARRY SAUTHOFF (1935).
3. GARDNER R. WITHROW (1931).
4. *Raymond J. Cannon* (1933).
5. *Thomas O'Malley* (1933).
6. *Michael K. Reilly* (1913).
7. GERALD J. BOILEAU (1931).
8. GEORGE J. SCHNEIDER (1935).
9. MERLIN HULL (1935).
10. B. J. GEHRMANN (1935).

WYOMING

At Large— *Paul R. Greever* (1935).

ALASKA

Anthony J. Dimond (1933).

HAWAII

Samuel W. King (1935).

PHILLIPPINE ISLANDS

Quintin Paredes (Nationalist (1936).

PUERTO RICO

Santiago Iglesias (Coalitionist (1933).

FEDERAL JUDICIAL ORGANIZATION

By William M. Schuyler

Editor, *The American Year Book*

SUPREME COURT OF THE UNITED STATES

Charles Evans Hughes (New York), Chief Justice of the United States, appointed 1930.

James Clark McReynolds (Kentucky), appointed 1914.

Louis Dembitz Brandeis (Kentucky), appointed 1916.

Pierce Butler (Minnesota), appointed 1925.

Harlan F. Stone (New Hampshire), appointed 1925.

Owen J. Roberts (Pennsylvania), appointed 1930.

Benjamin N. Cardozo (New York), appointed 1932.

Hugo L. Black (Alabama), appointed 1937.

Stanley F. Reed (Kentucky), appointed 1938.

Officers of the Supreme Court: Clerk—Charles Elmore Cropley. Deputy Clerks.—Reginald C. Dilli, Hugh W. Barr. Marshal.—Frank Key Green. Reporter.—Ernest Knaebel.

CIRCUIT COURTS OF APPEALS OF THE UNITED STATES

First Circuit.—Mr. Justice Brandeis; George Hutchins Bingham (New Hampshire), Scott Wilson (Maine), James M. Morton, Jr. (Massachusetts).

Second Circuit.—Mr. Justice Stone; Martin T. Manton (New York), Learned Hand (New York), Thomas W. Swan (Connecticut), Augustus N. Hand (New York), Harrie Brigham Chase (Vermont), Julian W. Mack (New York).

Third Circuit.—Mr. Justice Roberts; Joseph Buffington (Pennsylvania), J. Warren Davis (New Jersey),

Victor B. Woolley (Delaware), J. Whitaker Thompson (Pennsylvania), John Biggs (Delaware).

Fourth Circuit.—Mr. Chief Justice Hughes; John J. Parker (North Carolina), Elliott Northcott (West Virginia), Morris A. Soper (Maryland).

Fifth Circuit.—Mr. Justice Black; Rufus E. Foster (Louisiana), Samuel H. Sibley (Georgia), Joseph C. Hutcheson, Jr. (Texas), Edwin R. Holmes (Mississippi).

Sixth Circuit.—Mr. Justice McReynolds; Charles H. Moorman (Kentucky), Xenophon Hicks (Tennessee), Julian W. Mack (New York), Charles C. Simons (Michigan), Florence E. Allen (Ohio).

Seventh Circuit.—Mr. Justice Cardozo; Evan A. Evans (Wisconsin), William M. Sparks (Indiana), J. Earl Major (Illinois), Walter E. Treanor (Indiana).

Eighth Circuit.—Mr. Justice Butler; Kimbrough Stone (Missouri), John B. Sanborn (Minnesota), Archibald K. Gardner (South Dakota), Joseph W. Woodrough (Nebraska), Seth Thomas (Iowa).

Ninth Circuit.—(assignment temporarily vacant); Curtis D. Wilbur (California), Francis A. Garrecht (Washington), William Denman (California), Clifton Mathews (Arizona), Bert Haney (Oregon), Albert Lee Stephens (California), William Healey (Idaho).

Tenth Circuit.—Mr. Justice Butler; Robert E. Lewis (Colorado), Orie L. Phillips (Colorado), Sam G. Bratton (New Mexico), Robert Lee Williams (Oklahoma).

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

Finis James Garrett (Tennessee), Presiding Judge, appointed 1929.

Oscar E. Bland (Indiana), appointed 1923.

Charles Sherrod Hatfield (Ohio), appointed 1923.

Irvine L. Lenrott (Wisconsin), appointed 1929.

Joseph R. Jackson (Montana), appointed 1937.

UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA

D. Lawrence Groner, Chief Justice.
Harold M. Stephens.
Justin Miller.
Henry White Edgerton.

COURT OF CLAIMS OF THE UNITED STATES

Fenton Whitlock Booth (Illinois), Chief Justice, appointed 1928.

William Raymond Green (Iowa), appointed 1928.

Benjamin H. Littleton (Tennessee), appointed 1929.

Thomas S. Williams (Illinois), appointed 1929.

Richard Smith Whaley (South Carolina), appointed 1930.

DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA

Alfred A. Wheat, Chief Justice.
James M. Proctor.
F. Dickinson Letts.
Daniel W. O'Donoghue.
Jennings Bailey.
Peyton Gordon.
Oscar R. Luhring.
Joseph W. Cox.
Jesse C. Adkins.

UNITED STATES CUSTOMS COURT

Charles P. McClelland, Presiding Judge.
Walter H. Evans.
William J. Tilson.
Jerry B. Sullivan.
George Stewart Brown.
Frederick W. Dallinger.
Genevieve R. Cline.
David H. Kincheloe.
William J. Keefe.

UNITED STATES MARSHAL'S OFFICE

United States Marshal.—John B. Colpoys.

Chief Deputy Marshal.—Thomas E. Ott.

UNITED STATES ATTORNEY'S OFFICE

United States Attorney, District of Columbia.—Leslie C. Garnett.

Assistants.—John W. Fihelly, David A. Hart, Charles B. Murray, Albert Goldstein, John J. Wilson, Roger Robb, David A. Pine, Harry L. Underwood, Karl Kindleberger, George E. McNeil, Cecil R. Heflin, Samuel F. Beach, Louis L. Whitestone, Clinton D. Vernon, Allen J. Krouse, William Hitz, Jr., Eugene Carusi, Arthur B. Caldwell, Arthur J. McLaughlin, John W. Jackson, Howard Boyd.

FEDERAL PROSECUTIONS AND JUDICIAL DECISIONS

By Erwin N. Griswold

Professor, Harvard Law School

GENERAL

Litigation in the Federal courts in 1937 continued to involve questions of considerable public interest and importance. Although a number of the basic legal problems raised by the New Deal have been determined, many and difficult questions as to the breadth and application of the decisions remain. The event of the year of dominant interest in a consideration of the work of the Federal courts was, however, not a decision but the President's proposal on Feb. 5, 1937 for a reorganization of the Federal judiciary. Coincident with the discussion of this plan came an apparent change in the tendencies of some of the Supreme Court's decisions; and this change necessarily added to the problems of the lower Federal courts.

These leading cases decided by the Supreme Court during the year which involved questions of general constitutional law are discussed elsewhere (see "The Supreme Court and Constitutional Law," pp. 35–59). Apart from these leading cases, however, the Federal courts were confronted during the year with a great number of diverse problems of varying importance and complexity typical of judicial work in a Federal constitutional system.

THE CASE OF MR. JUSTICE BLACK

As an aftermath of the President's Supreme Court plan there arose a problem the importance of which was perhaps enhanced because it was not decided. In August, shortly before the adjournment of Congress, the President nominated Senator Hugo F. Black to be an Associate Justice of the Supreme Court, succeeding Mr. Justice Van Devanter. The latter had retired in May under the provisions of a statute enacted in February which for the first time permitted Supreme Court Justices to retire rather than to resign. The difficulty arose because Mr. Black was a member of the Senate when this statute was passed, and Article I, Section 6, of the Constitution provides: "No Senator or Representative shall, during the time for which he was elected, be appointed to any civil office under the authority of the United States, which shall have been created, or the emoluments whereof shall have been increased during such time." Two possible questions might be raised under this provision. Before the statute of February, 1937, was enacted, Supreme Court Justices might resign on full pay, but that pay might be reduced at the will of Congress, and in fact had been reduced in recent years in the case of Mr. Justice Holmes. Under the February, 1937, statute a Justice who retired did not cease to be a Justice, and his compensation was constitutionally immune from reduction. Did this constitute an increase in the emoluments of the office? Furthermore, if the retired Justice remained a Justice, could it be said that a successor was appointed to the same office? Or was it a new office to which a Senator or Congressman could not be appointed under Article I, Section 6, of the Constitution?

The existence of these questions was not denied, but during the year 1937 no method was found of raising

them justiciably. There was some opinion that the Supreme Court should raise the issues of its own motion just as it would in the case of a person who had no appointment or a patently defective appointment. When the Court convened in October, however, Senator Black presented himself and was received as a member of the Court. Efforts by members of the Bar and by other citizens to raise the issues were rejected on the ground that they had no interest in any pending controversy. Litigants who sought to raise the issue by a petition for a rehearing of a decision in which the new Justice had taken part were also unsuccessful. The Court gave no reasons in denying this petition for rehearing but it may have been on the ground that the new Justice was at least a *de facto* judge. The Attorney General or the United States Attorney for the District of Columbia might have raised the question by filing a petition for a writ of *quo warranto* in the District of Columbia courts. No such step was taken. Neither did Mr. Justice Black take any action during the year, by requesting the Attorney General to start *quo warranto* proceedings or otherwise, to remove the doubts as to his right to his seat.

TAXATION

Inter-Governmental Immunities. —With the great increase of state and Federal taxation in recent years the problem of the reciprocal immunities of the States from Federal taxation and the Federal Government from state taxation has become increasingly important and complex. A number of cases in this field were considered during the year. In *Liggett & Myers Tobacco Co.* v. *United States,* 299 U.S. 383, the Supreme Court held that the Federal tax on the manufacture of tobacco was applicable even though the tobacco was sold to a State for use in its hospitals. Although the effect of the tax was to increase the cost to the State, this effect was said to be "indirect" and thus constitutional. In two other cases, however, where the burden would seem to be much less direct, the tax was held invalid. In *New York ex rel. Rogers* v. *Graves,* 299 U.S. 401, the Court held that the salary of the General Counsel of the Panama Railroad Company was exempt from income taxation by the State; while in *Brush* v. *Commissioner,* 300 U.S. 352, the salary of the Chief Engineer of the New York City Bureau of Water Supply was held to be immune from Federal taxation.

The extent of inter-governmental immunities, illustrated by the two decisions last mentioned, raises problems of great complexity. But underlying all of these problems is the question whether these immunities serve any purpose, whether there is not in fact greater burden on governmental powers because of the immunities than there would be if no immunities against non-discriminatory taxation were found to exist. For the first time in more than a century this latter problem was squarely presented to the Supreme Court in the fall of 1937. The case of *James* v. *Dravo Contracting Co.,* and several related cases, involved the question whether a State might impose a tax on the gross income of contractors on Federal building projects. Although the United States was not strictly a party to these controversies, the Supreme Court in June directed the Attorney General to present the views of the United States on the question. In response a brief and argument were presented by the Solicitor General in the fall in which the position was taken that non-discriminatory state taxation of Federal contractors should be allowed and that the reciprocal immunity should now be read out of the Constitution (where it is found only by what has been called a necessary implication) as no longer suited to the modern situation. In December the Court handed down decisions, sustaining the tax by the margin of five to four. How far these conclusions will be enlarged and extended remains to be seen. There does seem to be some possibility that the Supreme Court's action may become a new landmark in this field.

State Jurisdiction to Tax.—Questions of the power of the States to impose taxes were presented in a number of cases. In *Henneford* v. *Silas Mason Co.,* 300 U.S. 577, the State of Washington was allowed to impose a tax on the "use" of goods brought in from outside the State, equivalent to the tax imposed on the sale of like goods within the State. This tax was upheld although the State had no power under the Constitution to tax imports or interstate commerce. The effect of the decision, in one guise at least, is to remove what amounts to a discrimination in favor of interstate commerce. It will also be a considerable factor in making state sales taxes effective.

Questions of the power of a State to tax interests which might be thought to lie beyond its borders were presented in two important cases. In *New York ex rel. Cohn* v. *Graves,* 300 U.S. 308, New York was allowed to tax the income derived by a New York citizen from the rent of land in New Jersey and interest on mortgages on New Jersey land. The decision in this case narrowly limited the case of *Senior* v. *Braden,* 295 U.S. 422, which had for a time seemed to point to a contrary result. The Cohn case, taken with *New York ex rel. Whitney* v. *Graves,* 299 U.S. 366, seems to indicate that there is no tendency in the Supreme Court at present to eliminate multiple state income taxation. In the Whitney case, the court upheld a New York tax on the gain derived by a Massachusetts citizen from the sale of a seat on the New York Stock Exchange.

Another state tax was upheld in *Great Atlantic & Pacific Tea Co.* v. *Grosjean,* 301 U.S. 412. This case involved a Louisiana tax on chain stores within the State at rates determined upon the basis of all stores owned by the taxpayer both within and without the State. The effect of the tax, thus, is to increase the tax on stores within the State because of the fact that the taxpayer owns stores outside the State. The Supreme Court held, however, that the tax remained a tax on stores within the State and thus within the State's taxing power.

Silver Tax.—On June 19, 1934, Congress enacted the Silver Purchase Act including a provision for a tax of 50 per cent on profits from dealings in silver. The tax was made applicable to all transfers on or after May 15, thus being retroactive for a period of 35 days. The validity of this tax was upheld in *United States* v. *Hudson,* 299 U.S. 498. The court's decision was put on the ground that the tax was an income tax and thus might validly be imposed on a moderate retroactive basis. Previous cases which had denied Congress the power to impose a tax on gifts made shortly before the enactment of the statute were not mentioned by the court. Although the tax was imposed on profits from dealings in silver it was in no sense a tax on the taxpayer's entire income, nor even on his net profits from silver transactions. The court, nevertheless, felt that the analogy to income tax cases was close enough to lead to the result upholding the validity of the tax.

Taxes Arising out of the A.A.A.—The collapse of the Agriculture Adjustment Act under the Supreme Court's decisions in 1936 brought with it a number of tax problems. Nearly $1,000,000,000 of processing taxes had been collected under this statute while some hundreds of millions, which had been "impounded" by the courts pending the decision, were returned to processors. Congress sought to reach these latter sums by imposing what was labeled in the statute as a tax on unjust enrichment, and became popularly known as the "windfall tax." The theory was that since the processors had collected these sums from their customers and could not be compelled to refund them to the customers, they were not equitably entitled to hold them. The question of the validity of this tax is still far from decision, but a number of courts held during the year that collection of the tax could not be enjoined, leaving the question of the validity of the tax to be deter-

mined in a suit by the taxpayer to get it back after it had been paid. Cases reaching this result included *Steinhagen Rice Milling Co.* v. *Schofield,* 87 F. (2d) 804 (C.C.A. 5th); *White Packing Co.* v. *Robertson,* 89 F. (2d) 775 (C.C.A. 4th); *Louisville Provisions Co.* v. *Glenn,* 18 F. Supp. 423 (W.D. Ky.); *Union Packing Co.* v. *Rogan,* 17 F. Supp. 934 (S.D. Cal.).

With respect to the processing taxes which had actually been paid to the Government, Congress sought to prevent their refund except to processors who could show that they had themselves "borne the burden" of the tax and had not passed it on to consumers. It set up an elaborate system for the consideration of processors' claims and provided a processing tax board of review somewhat similar to the Board of Tax Appeals. In *Anniston Manufacturing Co.* v. *Davis,* 301 U.S. 337, the Supreme Court held that this procedure was proper and that a processor could not attack the limitation on refunds except by a proceeding carried through the processing tax board of review. A suit brought by the processors directly against the collector seeking a refund of the tax in full without regard to the question of "passing on" was dismissed.

Following the decision of the Supreme Court invalidating the processing taxes, lower Federal courts during 1937 held invalid the taxes levied under the Bankhead Cotton Act (*Thompson* v. *Deal* (App. D.C.)), and the Kerr Smith Tobacco Act. *Robertson* v. *Taylor,* 90 F. (2d) 812 (C.C.A. 4th); *Glenn* v. *Smith,* 91 F. (2d) 447 (C.C.A. 6th). The Government, with apparent hesitation, finally sought review of the latter decision by the Supreme Court.

GOVERNMENT CONTROL OF BUSINESS

Holding Company Act.—The long drawn-out proceedings designed to test the validity of the Holding Company Act slowly made their way through the courts during the year. In January a District Court in New York denied a utility company's attack on the validity of the statute and this decision was affirmed in November by the Circuit Court of Appeals (*Electric Bond and Share Co.* v. *Securities and Exchange Commission* C.C.A. 2d). The registration provisions of the Act was upheld, and it was held that unregistered companies were not entitled to an injunction restraining the enforcement of provisions relating to registered companies. It was anticipated that this case would be finally before the Supreme Court.

Other S.E.C. Cases.—Although the Securities Act has been in force for some four years, its validity has never been directly presented to the Supreme Court. Numerous cases involving questions under the Act have been considered by lower Federal courts. In *Coplin* v. *United States,* 88 F. (2d) 652 (C.C.A. 9th), certain criminal provisions of the Act were upheld. A similar result was reached in *Seeman* v. *United States.* 90 F. (2d) 88 (C.C.A. 5th), involving a prosecution for the transportation of forged bonds with intent to defraud purchasers. Meanwhile, the powers of the Commission under the Act are being slowly delimited by the courts. In *American Sumatra Tobacco Co.* v. *Securities and Exchange Commission* (App. D.C.), the court held that it had power to review an order of the Commission denying an application that information disclosed by an applicant for registration of securities be kept confidential.

A.A.A. Marketing Control.—Although the Supreme Court held invalid the processing taxes imposed by the Agricultural Adjustment Act, other provisions of that statute remained in effect. One of these was that giving authority to the Secretary of Agriculture to make orders for the control of marketing certain commodities in interstate commerce. These orders have generally been upheld by the courts. Such an order relating to California and Arizona citrus fruits was sustained in *Edwards* v. *United States,* 91 F. (2d) 767 (C.C.A. 9th). In Florida, however, conflicting results were reached by two District judges with respect to

a similar order. In *United States* v. *Goldsmith Fruit Co.,* 19 F. Supp. 147, Judge Akerman found the statute under which the order was made invalid as an undue delegation of legislative power and an invasion of the reserved powers of the States.

Anti-Trust Laws.—Two major proceedings under the anti-trust laws were instituted during 1937. One, brought by the Government against the Aluminum Company of America, in a Federal court in New York, bogged down when the Company obtained an injunction from a Federal court in Pennsylvania against the further prosecution of the New York proceeding. The basis of the Pennsylvania injunction was the fact that the Government had obtained a decree against the same company 25 years before in the Pennsylvania Federal court, from which it was thought to follow that further proceedings would have to be brought before that court. This conclusion was finally overturned by the Supreme Court in December (*Aluminum Co. of America* v. *United States*). Until this decision was rendered, however, no further steps could be taken in the New York anti-trust proceeding.

Another anti-trust proceeding of importance was a criminal case brought in the Federal court in Wisconsin against a large number of oil companies and individuals connected with these companies, charging a combination to restrain trade in the oil industry. The defense seemed to be that the companies had only been doing since the days of N.R.A. (National Recovery Administration) what they had been encouraged to do by the Government during N.R.A. That the Government chose the difficult road of criminal prosecution made it seem that it felt it had a fairly clear case. Whether the jury would reach the same conclusion remained to be seen as the year was drawing to a close.

An important case between private litigants involving the anti-trust laws was *William Filene's Sons Co.* v. *Fashion Originators Guild of America,* 90 F. (2d) 556 (C.C.A. 1st). This case involved a trade association of manufacturers of women's dresses which was organized for the purpose of preventing style and design piracy. In order to carry out this purpose it adopted regulations prohibiting its members and associates from selling dresses to retailers who refused or failed to co-operate with the association. This was held to be a reasonable protection of the members' interests in the styles and designs and not a violation of the Sherman Act or the Clayton Act.

Commodity Exchange Act.—In 1936 Congress enacted substantial amendments to the Commodity Exchange Act regulating transactions in futures in butter, eggs, potatoes, and other commodities. The validity of this statute and the amendments was attacked on the ground that the matters involved were of local concern and thus beyond the power of Congress as defined by the Supreme Court's decision invalidating the N.R.A. and the Guffey Coal Act. Two Circuit Courts of Appeals, however, during the year rejected this contention, and held that the Commodity Exchange Act was a valid exercise of the power of Congress to regulate matters which vitally affect interstate commerce. [*Moore* v. *Chicago Mercantile Exchange,* 90 F. (2d) 735 (C.C.A. 7th); *Board of Trade of Kansas City* v. *Milligan,* 90 F. (2d) 855 (C.C.A. 8th].

Robinson-Patman Act—In 1936 Congress enacted the Robinson-Patman Act severely limiting the discounts and allowances which might be offered by manufacturers to dealers. Although this statute has been in effect for more than a year, it has not as yet met any significant court test. During 1937 the Federal Trade Commission decided a number of cases under the statute and ordered a number of corporations to cease and desist from practices which it held to be in violation of the statute. None of these cases had gone to a court decision by the end of the year. It is thus impossible as yet to tell what effect the courts will allow the statute to have. If past experience is any guide, it seems not unlikely that the courts will by interpretation

confine the statute to relatively small effect.

Strike Breaking.—In 1936 Congress enacted a statute making the transportation across state lines of strike breakers unlawful. This statute was invoked late in 1937 as the basis for the prosecution of some officers of the Remington Rand Company who were alleged to have imported men for the purpose of breaking a strike at one of their plants in Connecticut. The defense seemed to be that the men brought in were millwrights and that they had been employed for the purpose of dismantling the plant. The trial was before a jury which promptly brought in a verdict for the defendants. It thus appeared that this new statute might not be as efficacious in actual practice as its sponsors had intended.

LABOR PROBLEMS

National Labor Relations Board.—The decisions of the Supreme Court in May upholding the validity of the National Labor Relations Act by no means settled all the questions which can arise under that statute. In its wake the Circuit Courts of Appeals found itself confronted with a large number of cases involving the applicability of the Act. These cases chiefly involve the extent of the Labor Relations Board's power to compel corporations to withdraw recognition from company unions and the validity of orders of the Board with respect to particular industries which were asserted to involve no relation to interstate commerce. The conclusions reached were far from consistent, and several of the cases were pending before the Supreme Court at the end of the year. It is apparent that the Labor Relations Act, if it remains in force in substantially its present form, will give rise to much litigation in the years to come.

Norris–La Guardia Act.—The Norris–La Guardia Act forbidding the Federal courts to grant injunctions in "labor disputes" has come before the courts with surprising infrequency and has never had to stand a test before the Supreme Court. During 1937 it was invoked several times to prevent injunctions sought by one union against the activities of another. This situation was held to involve a labor dispute within the meaning of the Act and an injunction was denied in one case [*Cupples Co.* v. *American Federation of Labor,* 20 F. Supp. 894 (E.D. Mo.)]. In another case, however, decided a few weeks later, another District Court held that where the only controversy was between unions and not between an employer and his employees, the Act should not be construed to apply and an injunction should issue [*Oberman & Co.* v. *United States Garment Workers* (W.D. Mo.)].

Sit-Down Strikes.—The lower Federal courts were confronted in a number of cases with problems arising out of the "sit-down strike." Where the matter came to a decision the uniform conclusion was that such a strike construed an illegal holding of property, and employers were granted injunctions. This result was reached with respect to a strike in a Philadelphia manufacturing plant [*Apex Hosiery Co.* v. *Leader,* 90 F. (2d) 155 (C.C.A. 3rd)], and also with respect to a strike by the crew of a vessel at Baltimore [*Calamar Steamship Corp.* v. *Steamship Oakmar* (D. Md.)].

GOVERNMENT CORPORATIONS

Tennessee Valley Authority.—The T.V.A. was engaged in a series of conflicting litigation throughout the year designed to test the validity of its operations. The underlying question is whether its activities in the production and distribution of power are merely incidental to the regulation of navigation or whether they constitute the primary reasons for its existence. These cases have so far been largely inconclusive. At the end of the year there was pending before a three Judge District Court in Tennessee a proceeding which was designed to raise the question squarely and which may eventuate in an ultimate decision by the Supreme Court.

Home Owners Loan Corporation.—Two lower courts during the year held valid provisions of the Home

Owners Loan Corporation Act. In one of these cases a conviction for receiving fees contrary to the regulations of the corporation was sustained [*United States* v. *Kay,* 89 F. (2d) 19 (C.C.A. 2nd)]. An appeal from this decision was pending before the Supreme Court at the close of the year. A similar result was reached in another case [*United States ex rel. Handler* v. *Hill,* 90 F. (2d) 573 (C.C.A. 3rd)].

Federal Deposit Insurance Corporation.—The statute creating the Federal Deposit Insurance Corporation makes it a Federal crime to steal from any bank which is a member of the insurance system. This statute was held valid as applied to an insured bank which is not a member of the Federal Reserve System [*Weir* v. *United States* (C.C.A. 7th)]. Thus the Federal power has now been extended in some aspects at least throughout almost the entire banking system.

MISCELLANEOUS

Public Works Administration.—The question of the validity of P.W.A. grants to citizens continued to appear before the courts this year as in previous years. In *Alabama Power Co.* v. *Ickes,* 91 F. (2d) 303 (App. D.C.), the Court held that electric power companies were without standing to enjoin P.W.A. loans and grants to citizens for the construction of municipal electric plants. A similar result was reached in *Duke Power Co.* v. *Greenwood County,* 91 F. (2d) 665 (C.C.A. 4th). These cases were pending before the Supreme Court at the end of the year.

Gold.—Among the first decisions of the Supreme Court involving the validity of New Deal action were those concerning the abrogation of the "gold clause" in obligations. In one of these cases, involving a liberty bond, the Court held that the Government's action was unconstitutional, but denied recovery on the ground that the plaintiff had not shown that he had been injured by the breaking of his contract. A sequel to this decision appeared during the year, involving the question of the validity of a call for redemption of gold clause bonds where the offer was to pay only in paper money. Holders of these bonds contended that such a call was invalid and ineffectual, and that the bonds thus remained outstanding. On this basis, they sued to recover interest for the period after the call date. Lower courts registered conflicting results on this issue but the Supreme Court late in the year upheld the Government's contentions and sustained the validity of the call.

Wire Tapping.—One of the *causes celebres* of the 1920's was the case in which the Supreme Court by a close division sustained the admissibility of evidence obtained by wire tapping. Although this decision has stood for more than a decade the contention has recently been made that its result has been changed by reason of the provision of the Federal Communications Act designed to protect the secrecy of messages. In *United States* v. *Nardone,* 90 F. (2d) 630 (C.C.A. 2d), the conclusion was reached that such evidence was still admissible.

Firearms Act.—The Supreme Court during the year in *Sonzinsky* v. *United States,* 300 U.S. 586, affirmed the decision which had been reached by the lower Federal courts sustaining the validity of the National Firearms Act. The Federal Government was thus allowed through the taxing power to reach and regulate a matter which would not seem to lie otherwise with any Federal regulatory power. The decision thus reached is in line with other cases involving noxious objects such as narcotics. It stands by way of contrast with recent Supreme Court decisions denying the power of the Federal government to use taxation as a means of regulating economic activity.

Prison Labor.—The Supreme Court also affirmed lower court decisions sustaining the Ashhurst-Sumners Act which prohibits the transportation in interstate commerce of prison made goods destined for sale within States which forbid the sale

of such goods (*Kentucky Whip and Collar Co.* v. *Illinois Central Railroad Co.*, 299 U.S. 334). This decision seems substantially to overrule the earlier cases preventing Federal regulation of child labor. Although the door was thus nearly open to further Federal action in the child labor field, no steps were taken by Congress during the year.

FEDERAL CIVIL SERVICE

By Harry B. Mitchell

President of the United States Civil Service Commission

LEGISLATION

The encouraging progress toward good government made by the Second Session of the 74th Congress was reversed by the First Session of the 75th Congress so far as concerned the application of the merit system in employment. Members of the House of Representatives and of the Senate introduced 146 bills which contained complete exemptions from the merit system for all employments, and numerous other bills were introduced which contained partial exemptions including always the better positions. There were 21 bills enacted into law exempting all employments thereunder from the provisions of the Civil Service Act, and a considerable number of other bills containing partial exemptions.

The more important of these acts registering so marked a backward step in good government included the act establishing on a three-year basis the Civilian Conservation Corps; the act establishing the National Bituminous Coal Commission; the act establishing Disaster Loan Corporation; the Farm Tenant Act; the United States Housing Authority Act; New York City's World's Fair Act; the San Francisco Exposition Act; and the act requiring confirmation by the Senate of appointments to expert positions at $5,000 a year or more with the Social Security Board. The law relating to the Civilian Conservation Corps withdraws from the classified service approximately 6,000 positions which the previous Congress and President Roosevelt had made competitive.

Certain former employees of the Panama Canal and the Panama Railroad Company on the Isthmus were brought within the provisions of the Canal Zone Retirement Act; and the retirement act of May 29, 1930 was extended to employees of the legislative and judicial branches of the Federal Government. The Civil Service Commission now administers four separate retirement acts; namely, the Act of May 29, 1930 and its predecessors beginning with the Act of May 22, 1920, affecting more than 433,000 Federal employees; the Canal Zone Retirement Act of March 2, 1931, covering United States citizens who are employees of the Panama Canal on the Isthmus of Panama, or of the Panama Canal Railroad also on the Isthmus; the Alaska Railroad Retirement Act of June 29, 1936, which covers the operating employees of the Alaska Railroad and the Alaska Engineering Commission and directs that the clerical employees of the railroad and commission be subject to the regular retirement act of May 29, 1930; and the Act of July 13, 1937, covering employees of the legislative and judicial branches of the government.

The Congress in an act approved July 26, 1937, repealed Section 213 of the original Economy Act of June 30, 1932, which directed that preference in appointment be given to persons whose spouses were not already in the service of the Federal Government or of the government of the District of Columbia; and in reductions in force in any class of positions directed that the first to be separated was the employee whose spouse was also employed in the Federal Government or the government of the District of Columbia.

Somewhat less than 2,000 persons were separated from the Federal Government because of this statute, and undoubtedly a large number of persons failed of appointment due to its operation. A principal source of complaint against the statute was the fact that its application was confined almost wholly to persons in the low income group. When reductions in force were being made the supervisors were not those dropped but the subordinate employees, and the statute was specific in stating that it had application only to employees in the *class* of positions in which reductions in force were being made.

The Presidents for many years have recommended that positions of postmaster at first-, second-, and third-class offices be brought within the competitive classified service as they are not positions which may be regarded as policy-forming and relate solely to the business of government. The House of Representatives in January, 1937 passed the bill recommended by the House Committee on Civil Service to make these recommendations effective; but no action was taken by the Senate before adjournment in August.

GROWTH OF EXECUTIVE CIVIL SERVICE

The table below gives statistics as to the number of competitive classified positions and the number of unclassified and exempt positions in the Executive branch of the civil service divided into two-year periods. During the fiscal year ended June 30, 1937, 33,348 positions were added to the classified group, and the exempt group was reduced by 15,943 positions.

	June 30, 1929	June 30, 1931	June 30, 1933	June 30, 1935	June 30, 1937
Competitive classified positions	445,957	468,050	456,096	455,264	532,073
Unclassified and exempt positions	141,708	148,787	109,336	264,176	309,591
Total	587,665	616,837	565,432	719,440	841,664

EXECUTIVE ACTION

The Executive Order of Feb. 11, 1937 placed within the competitive classified service in the Federal Prison system all positions of warden, superintendent, deputy warden, assistant superintendent, industrial superintendent, and inspector, earning from $3,500 to $7,000 a year. All other employees except the Director and three Assistant Directors have been and continue to be in the classified service. The order affects 44 positions.

The President in letters in May addressed to the Vice President and the Speaker of the House of Representatives called attention to the growing tendency of the United States Congress to disregard the merit system, and he urged "the desirability of placing all but policy-forming positions under the merit system."

In a letter to the biennial session of one of the national unions of Federal employees the President expressed the view that it was both natural and logical for Federal employees to organize, but that meticulous attention should be paid to the special relationships of public servants to the public itself and to the Government. He added that the very nature and purposes of government make it impossible for administrative officials to represent fully or to bind the employer since the employer is the whole people, who speak by means of laws enacted by their representatives in Congress. The President emphasized his conviction that militant tactics have no place in the functions of any organization of Government employees, that upon them rests the obligation to serve the whole people whose interest and welfare require orderliness and continuity in the conduct

of government activities. Therefore, a strike of public employees would manifest nothing less than an intent on their part to prevent or obstruct the operations of government until their demands are satisfied. "Such action looking toward the paralysis of Government by those who have sworn to support it, is unthinkable and intolerable."

THE MERIT SYSTEM IN THE STATES

The merit system of employment received greater consideration among the States and municipalities than for many previous years. Arkansas, Connecticut, Maine, Michigan, and Tennessee enacted civil service laws for state employees; and single branches of the legislative bodies of Alabama, Georgia, Kansas, Minnesota, and Oklahoma passed similar bills which were either defeated or tabled by the other house. Fifteen States have adopted civil service laws as follows with the year of adoption: New York, 1883; Massachusetts, 1884; Illinois, 1905; Wisconsin, 1905; Colorado, 1907; New Jersey, 1908; Ohio, 1912; California, 1913; Kansas, 1915 (no appropriation granted since 1919); Maryland, 1920; and Arkansas, Connecticut (second law), Maine, Michigan, and Tennessee, 1937.

The American Bar Association passed resolutions recommending that all positions in the Federal service which affect the administration of justice be placed under the merit system.

CIVIL SERVICE IN CALIFORNIA

Sacramento County appointed a Civil Service Commission of three members to install a merit system for the 600 county employees. The heads of major departments of the city government of Los Angeles were brought under the rules of the municipal Civil Service Commission. The Superior Court of the State of California for the City and County of San Francisco denied the claims of a San Francisco testee that examination papers, ratings, and gradings are "public records" and as such open to the inspection of any citizen, and denied his right to examine papers other than his own. A Los Angeles court expressed the opinion that appointment does not clothe appointees with full protection of the civil service law until the full probationary period has been served. Santa Barbara adopted a civil service plan for positions of fireman and policeman.

The legislature passed a new civil service act affecting the "California State Personnel Board," for the purpose of promoting and increasing economy and efficiency in the state service and of providing a comprehensive personnel system for the state civil service. It provides for the development of a career service by filling higher positions through promotion wherever practicable.

The California third district court of appeals ruled that the letting of a contract for washing windows of state buildings was a violation of the civil service amendment to the State Constitution. The presiding justice wrote in part: "It is not reasonable that the same character of state service should be rendered by civil service employees in one part of the state, and be a subject of independent contract in another part of the state. If this agreement is valid there is nothing to prevent similar agreements from being made in relation to other janitor service, gardening, typing, and many other branches of the service now accepted as subject to civil service. To sanction such an agreement would destroy the effectiveness of the enactment of the people in creating a civil service act."

CIVIL SERVICE IN OTHER STATES

Arizona.—The City Council of Tucson directed the extension of the classified service to cover a majority of the positions in the city government.

Florida.—Lake Worth and Hollywood established civil service boards for positions of policeman and firefighter.

Indiana.—The merit system was extended to all state institutions by announcement of the Governor and the Board of Public Welfare. Approximately 3,500 employees were affected.

Iowa.—The Legislature authorized cities of 15,000 or more to establish civil service systems.

Kansas.—The Legislature authorized cities between 30,000 and 50,000 in population to establish civil service systems.

Kentucky.—Approximately 600 positions in the Health and Welfare Departments of Louisville were made subject to the merit system by unanimous vote of the State Legislature.

Maryland.—Montgomery County was placed under the civil service system subject to administration by the State Employment Commissioner. Between 300 and 400 employees were affected.

Michigan.—Monroe applied the civil service system to the police department, the fire department already being subject thereto; and Marine City adopted a civil service system for all departments; Adrian, by a large vote, extended it from the fire department to include the police department and other city employees; and Kalamazoo passed a merit system ordinance. Hamtramck defeated a civil service ordinance.

Nebraska.—By public vote Hastings established a merit system for city employees.

New Jersey.—By a vote of more than three to one, 11 New Jersey cities and one county voted to place their municipal employees under the merit system, every jurisdiction in which a vote was held going solidly for better personnel administration in government. The communities affected are: Morris County, Morristown, Boonton, Dover, Parsippany-Troy Hills, Montville, Butler, Orange, Nutley, Irvington, Kearny, North Arlington. Approximately 1,500 employees were involved.

New York.—The Court of Appeals upheld the action of the New York State Civil Service Commission in placing magistrate court clerks in the classified civil service. Nassau County adopted its own civil service system instead of continuing under the State Civil Service Department.

North Dakota.—The Legislature authorized cities over 4,000 in population to establish civil service systems.

Ohio.—A Court of Common Pleas in Columbus upheld the right of the Ohio Civil Service Commission to establish minimum standards of education and experience for applicants to social worker examinations. The Governor signed a bill prohibiting the State Civil Service Commission from fixing educational qualifications as prerequisite for admission to a test except for technical positions which have limitations specifically imposed by law.

Oregon.—The respective City Councils of Astoria and The Dalles established civil service commissions to hold examinations for positions of fireman and firefighter.

Pennsylvania.—A Pennsylvania court expressed the opinion that appointment does not clothe an appointee with full protection of civil service law until the full probationary period has been served. This is similar to action reported above by a Los Angeles court.

South Dakota.—The Legislature authorized all cities in the State to establish civil service systems.

Texas.—The Legislature defeated an enabling act for cities and counties to establish civil service systems.

Washington.—By state enactment all municipalities having three or more paid police officers are required to establish civil service commissions.

West Virginia.—There was enacted into law a bill providing for the appointment of civil service commissions for police departments in all cities of the State having a population of 2,500 or more. This was made obligatory for cities of population of 5,000 or more.

HONESTY UNDER THE MERIT SYSTEM

It has always been contended by advocates of the merit system that the open competition it afforded to the public resulted in employees not only of higher ability but of higher standards of honesty and integrity. Recently published statistics provide striking corroboration of this claim. In 1935 there were but four arrests for embezzlement among 35,000 rural

mail carriers and only 107 out of 49,000 city carriers; yet out of less than 14,000 postmasters in first-, second-, and third-class offices who received political appointments there were 136 arrests. The postal service consists for the most part of merit system employees and has a "tradition of honesty." The higher class of postmaster positions, however, are not in the competitive service and appointments thereto are made on a political basis.

REPORT OF PRESIDENT'S COMMITTEE ON ADMINISTRATION MANAGEMENT

This Committee in January, 1937, recommended sweeping reroganization of the Federal Government, including many changes in civilian personnel administration. Among these changes are:

1. Substituting a single Civil Service Administrator for the present Civil Service Commission, with a Civil Service Board of seven members to meet at least quarterly and to serve in an advisory capacity to the President and the Administrator and as a "watch dog" of the merit system.

2. Extending the merit system to positions in the exempt agencies regarded as permanent; and to higher positions and all other exempt positions in the regular departments and establishments, excepting only such of the highest positions as the President may declare to be policy-determining. This would provide a career system in the Federal service.

3. Recommending higher salaries for the principal administrative and supervisory positions, and recommending that the compensation schedules of the Classification Act of 1923, as amended, be extended to the field services and to excepted positions and to some of the government corporations in the Federal service.

None of the recommendations of the President's Committee has been enacted into law.

OVERTIME IN THE FEDERAL SERVICE

The Federal annual leave act of March 14, 1936, required that the respective departments and independent establishments keep a record of all work performed in excess of the work required by departmental regulations for the period from July 1, 1936 to Dec. 31, 1936, reporting the facts monthly to the Civil Service Commission. The Commission in turn was directed to submit a report to Congress not later than Jan. 31, 1937.

During the six months period an average of 76,448 employees per month performed overtime work in excess of the minimum number of hours required by the regulations of their respective departments and establishments. The number of overtime hours amounted to 10,613,698 for the period. If each employee had been compensated for overtime at the rate of salary he was receiving at the time the total cost to the government for the six months would have been $7,762,393.70.

CHRONOLOGY OF THE NATIONAL GOVERNMENT AFTER ADJOURNMENT OF CONGRESS

(From *The New York Times*, January 1, 1938)

THE PRESIDENT

Aug. 26—President Roosevelt left Washington to spend a month at Hyde Park.

Aug. 28—Warned of danger to democracy in "small minority."

Sept. 1—Left Hyde Park and sailed on a cruise after disposing of all bills sent to him at the close of the regular session.

Sept. 3—Caught the first fish of his cruise off Montauk.

Sept. 5—Planned tour of Pacific Coast, chiefly to sound sentiment.

Sept. 6—The President and party caught thirty-six striped bass as

luck revived on the last day of their cruise.

Sept. 10—In talk at a hospital asserted that mental hygienists were performing a valuable public service.

Sept. 13—Left Hyde Park for Washington.

Sept. 17—Extolled national unity achieved since the Civil War.

Sept. 19—Returned to Hyde Park and rested, preparatory to his Western trip.

Sept. 21—Discounted "politics" in his Western tour.

Sept. 22—Started his tour to the West after announcing the creation of a national foundation for unified fight on infantile paralysis.

Sept. 23—In speech from train to Iowa crowd reasserted his aim of stabilized crop prices.

Sept. 23—Shunned a court reprisal against Senator O'Mahoney; noted war clouds in a speech in Wyoming.

Sept. 27—In a talk at Boise, told of his "planning" for a better country and better peace.

Sept. 28—In a speech at Bonneville Dam declared the budget would be balanced in the next fiscal year.

Sept. 30—Cheered by large crowds during "good neighbor" visit to Victoria, B.C.

Oct. 1—Motoring to Tacoma in a car without radio, he missed Justice Black's radio speech; does not comment.

Oct. 2—Visited the Grand Coulee dam and forecast a trek from the "dust bowl."

Oct. 3—Omitted mention of Senator Wheeler in speeches in Montana, but named the State's other members of Congress.

Oct. 6—Returned to Hyde Park and hinted a special session of Congress.

Oct. 7—Left Hyde Park for Washington to plunge at once into our course abroad.

Oct. 8—Asserted that he would be too busy, during his present five-day stay in Washington, to meet Justice Black.

Oct. 11—Declared in a radio speech that the nation was united in determination to uphold the ideal of liberty; received Mussolini's son at tea.

Oct. 13—Spoke at Poughkeepsie, saying people rightly talked about religion.

Oct. 19—Left Hyde Park for Washington.

Oct. 21—Names his son James as coordinator of executive work of eighteen big independent Federal agencies.

Oct. 23—In an Armistice Day proclamation renewed his plea for peace.

Oct. 28—Discussed with Will H. Hays restrictive quotas abroad on motion picture films; also conferred with Felix Frankfurter.

Oct. 30—Told Peoples Mandate fliers that nations afar were influenced by the treaties negotiated at the Buenos Aires conference.

Nov. 2—Gave his occupation as "farmer" as he voted at Hyde Park.

Nov. 4—Mayor La Guardia called on the President in New York City; the meeting was seen as a gesture of friendship.

Nov. 10—Became the first honorary member of the American Press Society.

Nov. 11—Visited tomb of the Unknown Soldier at Armistice Day services at Arlington.

Nov. 18—Underwent operation for removal of abscessed tooth.

Nov. 21—Reported to have told Norman H. Davis and another friend that he would not seek a third term.

Nov. 22—Recurrence of tooth infection kept the President in Washington, deferring his trip to Warm Springs.

Nov. 23—Held a limited press conference in his study in the White House where he was still confined because of tooth infection.

Nov. 25—Led the nation in marking Thanksgiving Day, spending his first Thanksgiving in the White House.

Nov. 27—Completed his message to Congress and left Washington to fish off the Florida coast.

Nov. 29—Caught the first fish of his Florida coastal cruise.

Nov. 30—Fished off Dry Tortugas.

Dec. 2—Cut his fishing cruise short in order to return to Washington for treatment of sore gums.
Dec. 4—Ended his fishing trip to return to Washington.
Dec. 5—Entrained at Miami for Washington.
Dec. 6—Arrived in Washington; jaw infection improved.
Dec. 7—Resumed his regular press conferences.
Dec. 11—Saw himself lampooned at the annual dinner of the Gridiron Club.
Dec. 16—Presented gold medal to Lincoln Ellsworth in recognition of Antarctic land claimed for the United States; was host at White House reception to the Diplomatic Corps, the first of the Winter social series.
Dec. 17—Indicated, at a press conference, his strong opposition to war referendum plan.
Dec. 21—President Roosevelt charged that a large part of the press and a few business men fostered fear; he conferred with eight liberal Senators.
Dec. 22—Defied Senators by naming York as West Virginia Collector of Customs.
Dec. 24—President Roosevelt, quoting a newspaper columnist, at Christmas tree ceremony bade "good-will to every last son of God."

AGRICULTURE

Aug. 23—AAA set loans to cotton growers at 9 cents a pound, or 1 cent below the figure urged in Congress.
Aug. 25—President Roosevelt signed the Congressional Joint Resolution binding Congress to take up farm legislation as the next step, upon reconvening.
Aug. 31—Hopkins called for a long-term reconstruction program Federally directed and financed.
Sept. 6—Senator Bankhead called 9-cent cotton loans a deliberate effort to lower the price.
Sept. 20—Secretary Wallace announced the AAA program for 1938, cutting cash crops acreage to avoid surpluses.
Sept. 21—CEA began investigation of trading in September corn.
Sept. 22—Farm parity price goal abandoned by AAA in favor of fifty-year pre-war average price.
Oct. 1—Secretary Wallace reoffered the old AAA program for crop control, in address to 3,000 farmers at Memphis.
Oct. 8—President Roosevelt and Secretary Wallace conferred on cotton.
Oct. 20—Secretaries Wallace and Morgenthau conferred with the President and urged a 46 cents a bushel corn-loan program.
Oct. 25—The AAA cut its goal of cotton planting for 1938 to 2,000,000 acres; favored a slight reduction for potatoes.
Nov. 2—President Roosevelt ordered the RFC to advance $85,000,000 to the Commodity Credit Corporation for corn loans.
Nov. 2—Compulsory control of the corn market urged by the AAA; loans set at 50 cents a bushel.
Nov. 5—Secretary Wallace declares that cotton plantings must eventually be about 8,000,000 to 12,000,000 acres.
Nov. 6—The AAA acted to stabilize potato prices, offering $1,500,000 to raisers who fed their surplus to stock.
Nov. 10—Federal experts increased their estimate of this year's corn crop by 9,000,000 bushels.
Nov. 12—House farm group split with the AAA on compulsory crop control and financing of new farm program.
Nov. 13—Secretary Wallace, in annual report, linked "ever-normal" plan for trade and industry with farm prosperity.
Nov. 22—Pope-McGill Farm Bill was reported to the Senate with prospect of much amending on the floor.
Nov. 23—Senate began debate of the Pope-McGill bill.
Nov. 27—House minority report assailed the Jones Farm Bill, asserting that some of its adversaries sought a court fight.
Nov. 29—House began consideration of the Jones Farm Bill.

Nov. 30—Dissolution of the Farmers' National Grain Corporation was voted by its directors after eight years of losses.

Dec. 1—Secretary Wallace warned that the Pope-McGill bill would cost up to a billion dollars.

Dec. 2—Move to recommit the Pope-McGill bill followed an attack on Wallace in the Senate over cotton and wheat control.

Dec. 6—Compulsory wheat control was defeated in the House by vote of 85 to 76 in first test of sentiment; Senate Agriculture Committee reported favorably the $50,000,000 Seed Loan Bill.

Dec. 7—Senate defeated the McNary amendment to the Pope-McGill bill proposing to limit the program to Jan. 1, 1941.

Dec. 8—Senate defeated, by 38 to 37, the O'Mahoney amendment to the Pope-McGill bill providing for a larger reserve supply of corn before compulsory marketing quotas were invoked; the House rejected the Patman parity loan amendment to the Jones Farm Bill.

Dec. 10—House passed the Jones Farm Bill by vote of 267 to 130; a motion to recommit the measure lost by only 9 votes.

Dec. 11—Senate drive to limit the Pope-McGill Farm Bill to $500,000,000 was begun by Democrats and Republicans.

Dec. 14—Senate defeated the Vandenberg amendment to the Pope-McGill bill to limit its cost to $500,000,000.

Dec. 17—Senate, by vote of 59 to 29, passed the Pope-McGill bill, designed to carry out Secretary Wallace's ever-normal-granary plan.

Dec. 20—Senate ratified the International Sugar Quota Treaty; AAA put the quota for 1938 at 6,861,761 short tons.

ARMY

Dec. 5—General Craig, Chief of Staff, in annual report rated the tank and the airplane as only auxiliaries to the soldier on foot.

Dec. 9—Revealed that the army is weak in anti-aircraft guns; has only forty-two for continental defense.

Dec. 19—President Roosevelt, in letter to a House committee, advocated a law to prohibit "spy" photographs of fortifications.

AVIATION

Sept. 1—Senator McCarran charged that the Postoffice Department's policy on airlines had hampered aviation.

Oct. 1—Interstate Commerce Commission granted mail-carrying rate rises to American Airlines, overruling Postmaster General Farley's objections.

Oct. 17—Bureau of Air Commerce imposed rigid regulations for all plane traffic to promote safety.

Nov. 17—Maritime Commission asked for loans to help build flying boats, recommended supervision of ocean air travel.

BUDGETARY

Aug. 28—President Roosevelt pocket-vetoed a $2,580,000 farm bill, citing the Treasury's burden from other aid to agriculture.

Aug. 30—Representative Taber, ranking minority member of House Appropriations Committee, estimated that the first session of the Seventy-fifth Congress had appropriated $10,252,892,556; predicted a deficit of $3,000,000,000 to $4,000,000,000.

Aug. 31—Representative Cannon, challenging Taber's figures, insisted that the session's appropriations were $897,269,664 under the Taber estimate.

Sept. 6—Treasury raised its five-year note rate to 2 per cent in Sept. 15 exchange operation of $817,483,000.

Sept. 13—Treasury cut rate on its nine-month bills; Secretary Morgenthau gratified.

Sept. 27—Treasury began scanning its budget for pruning in an economy drive made at the behest of the President.

Sept. 28—Senator Byrd demanded that President Roosevelt act, not

talk, in bringing about governmental economy.

Oct. 2—President Roosevelt, seeking to balance the budget, opposed further direct aid from the Treasury to the cotton South.

Oct. 15—Joseph P. Kennedy, after a long conference with the President, predicted a balanced budget.

Oct. 18—President Roosevelt put the deficit at $695,000,000, but predicted relief cuts; said the PWA and RFC were liquidating.

Oct. 19—President Roosevelt reasserted the responsibility of Congress for the rise in the Federal deficit.

Oct. 23—President Roosevelt warned Congress leaders that new taxes must cover any additional costs in the Farm Bill.

Oct. 26—President Roosevelt held to hopes of balancing budget; conferred with officials and men active in business.

Nov. 10—Secretary Morgenthau asserted that the Administration would make a "determined effort" to balance the budget through reducing relief, farm and public works expenditures.

Nov. 27—President Roosevelt, it was stated, would veto bills exceeding the budget unless Congress at the same time provided revenue for them.

Dec. 10—Defying the President on highway economy, Representative Cartwright said he would not call upon a House committee to consider such legislation.

Dec. 22—President Roosevelt warned Congress to help balance the budget, declaring cuts must be made somewhere.

CCC

Nov. 11—Director Fechner announced that the Civilian Conservation Corps has filed its quota of 300,000 young men and war veterans with the enrollment of 133,243 replacements.

Dec. 9—President Roosevelt conferred with a House delegation opposed to proposed reductions in the CCC.

Dec. 12—Fechner announced that 104 CCC camps would be closed by Jan. 1, and that the maximum strength to be carried on the rolls during the initial quarter of 1938 would be 280,000 men.

CHINA

Aug. 23—Secretary Hull appealed for peace; cited pact ideas, but said United States was in middle of the road; Senator Pittman explained President Roosevelt's delay in declaring a state of war to exist.

Aug. 26.—The President and Cabinet decided to maintain a "watching" position in the Far East crisis.

Aug. 27—Secretary Hull warned Japan and China on United States property and nationals in China.

Aug. 30—United States warned ships to avoid Shanghai after Chinese planes bombed a Dollar liner, the *President Hoover*, injuring seven of the crew.

Sept. 1—The President and Admiral Leahy, Chief of Naval Operations, decided the United States would not strengthen its fleet in Chinese waters.

Sept. 2—Admiral Yarnell announced that American ships calling at Shanghai would get a naval escort; United States policy backed up diplomatic moves in Far East.

Sept. 3—American Navy to transport United States residents from Shanghai; Hull issued new warning to Americans.

Sept. 4—United States, Britain and France asked the Chinese and Japanese to shift the fighting from Shanghai.

Sept. 5—President Roosevelt asserted that Americans who remained in China, after being told to go, would do so at their own risk.

Sept. 7—Americans in China, angered at the President's warning to leave, sent protests to Washington, where surprise was manifested over the anxiety of American nationals at Shanghai; no change in protective measures contemplated.

Sept. 9—Secretary Hull said United States would protect nationals in China to limit of its ability.

Sept. 10—State Department warned American ships of dangers in Chi-

nese waters because of Japanese blockade.

Sept. 14—Government-owned ships forbidden to carry arms to the Far East; private lines warned not to do so.

Sept. 16—American-owned ship unloaded planes destined for China, obeying the President's warning.

Sept. 17—China protested the American curb on war shipments to the Orient, saying it aided Japan.

Sept. 19—Shanghai cheered the arrival of American marine reinforcements.

Sept. 20—American Embassy at Nanking was evacuated as the city awaited big air raid; other foreign diplomats remained there; Moore, Acting Secretary of State, gave the United States Government's position to Japan; League bid accepted by the American Government.

Sept. 21—United States and Britain urged Japan not to bomb Nanking, citing defenseless citizens; League advisory group sat to consider China's appeal, with participation of the United States.

Sept. 22—The United States "objected" to air raids on Nanking in a sharp note to Japan; "all rights" were reserved.

Sept. 24—Admiral Yarnell said the Asiatic Fleet would remain in Chinese waters, accepting risks to protect Americans.

Sept. 28—Secretary Hull backed the League rebuke to Japan for bombing Chinese noncombatants.

Oct. 1—Admiral Yarnell denied assertions that the United States had promised to evacuate Americans by Sept. 26.

Oct. 6—United States condemned Japan as invader of China; acted to back League of Nations; League convoked nine-power meeting to seek settlement of Sino-Japanese conflict; former Secretary Stimson urged the United States to support the League in protests against Japanese policies.

Oct. 8—President Roosevelt consulted Cabinet and other advisers on the Far East; British Ambassador Lindsay discussed policy.

Oct. 12—American Federation of Labor asked for boycott of Japanese.

Oct. 15—President Roosevelt favored mediation by other powers to end the warfare in China.

Oct. 16—United States accepted bid to Far East parley at Brussels; Norman H. Davis designated as the American delegate; Senator Pittman asserted that the Neutrality Act did not bar participation in the Brussels parley.

Oct. 19—Announced by President Roosevelt that the United States would enter the Brussels parley without commitments to other nations.

Oct. 20—Norman H. Davis sailed for nine-power parley; peace groups asked for declaration of American Government's policy.

Oct. 27—American Marines ordered to fire on all planes attacking their defense sector at Shanghai.

Nov. 6—Brussels nine-power conference in conciliatory note asked Japan to exchange views on China.

Nov. 15—The nine-power parley at Brussels voted criticism of Japan.

Nov. 24—Brussels nine-power conference reaffirmed its peace aims and recessed.

Nov. 27—United States, Britain and France warned Japanese Government of their interest in China's customs.

Nov. 30.—Washington investigated reported closing of "Open Door" by Japanese tariff discrimination; American officials confirmed a denial by Japanese that they hurled an American flag into the river at Shanghai.

Dec. 3—Japanese quit the center of Shanghai after United States Marines forced them to leave the marine zone.

Dec. 6—Secretary Hull, in reply to House inquiry, defended not invoking the Neutrality Act in the Sino-Japanese conflict.

Dec. 12—U.S. gunboat *Panay* was bombed and sunk by Japanese airplanes in the Yangtze River above Nanking.

Dec. 13—United States demanded full satisfaction from Japan for

the sinking of the *Panay*, Congress divided in opinion, some demanding recall of American forces from China, others a firm course.

Dec. 14—Secretary Hull, in a stern note, demanded formal redress from Japan, ignoring apologies; Admiral Yarnell rejected the idea of withdrawing American gunboats from the Yangtze as Japanese suggested; Japan apologized to the United States for the *Panay* sinking.

Dec. 17—President Roosevelt summoned Admiral Leahy, chief of staff, to the White House for a conference over the *Panay* incident.

Dec. 19—U.S. cruiser *Marblehead* and the destroyer *Pope* rushed to Tsingtao to protect 300 Americans endangered by spread of the Sino-Japanese war.

Dec. 20—Secretary Hull, in letter to Senator Smathers, declared the United States would not withdraw her armed forces from China during the present emergency.

Dec. 21—President Roosevelt barred "peace at any price"; former Governor Landon supported the President's Far Eastern policy.

Dec. 22—Report of the *Panay's* commander reached Washington and was immediately sent to the President.

Dec. 24—Japan, in a new note to the United States, said the guilty had been punished; reports of the *Panay's* commander and the American naval court of inquiry conflicted with the Japanese note.

Dec. 25—The United States accepted Japan's apologies but insisted on safeguards.

COAL

Nov. 3—Charles F. Hosford offered his resignation as chairman of the Bituminous Coal Commission.

Nov. 30—Bituminous Coal Commission set minimum prices at the mine on bituminous coal in the East; barred "unfair" methods.

Dec. 16—Bituminous Coal Commission's price schedule, with modifications, took effect.

COMMUNICATIONS

Aug. 20—Frank R. McNinch confirmed as chairman of the Federal Communications Commission.

Sept. 15—McNinch conferred with the President on formulation of new FCC policies.

Oct. 3—McNinch hinted radio rate curbs and regulation of broadcast charges.

Oct. 14—McNinch abolished three FCC jobs as the first step in carrying out the assignment from the President to put the commission's affairs in order.

Oct. 18—The FFC extended radio regulation over the short-wave range, opening a new field of service.

Nov. 2—FCC took under advisement the question whether non-commercial or commercial interests should control important short-wave frequencies for broadcasts to Latin America.

Nov. 11—McNinch put the FCC "in a glass house," ordering publicity for all applications and queries on pending action.

CONGRESS

Aug. 21—First regular session of Seventy-fifth Congress adjourned!

Aug. 23—Special session of Congress in November predicted by Secretary Wallace and Representative Miller after visit to White House.

Oct. 4—President Roosevelt, traveling in the West, hinted a special session.

Oct. 6—President upon return to Hyde Park indicated he might call Congress between Nov. 6 and 12.

Oct. 11—President called special session for Nov. 15, with crop-control and wage-hour legislation as major features of the program.

Nov. 15—Congress convened in a changed mood of independence, seemingly more cautious and conservative; put business aid to the fore after reading President's message.

Nov. 16—Congressional program snarled and filibuster developed in Senate against the anti-lynching bill; petition to discharge the Rules Committee from considera-

tion of the Wages and Hours Bill presented by Representative Norton.

Nov. 23—Senate opened debate on the farm bill.

Nov. 24—House passed the first bill of the session, liberalizing the Federal Credit Union Act.

Nov. 29—Special message from the President urged a six-point housing program; Wagner-Steagall Housing Bill introduced; House opened debate on the Jones Farm Bill.

Nov. 30—The President sent a special message to Congress calling for decreased expenditures for highways, stirring revolt among some members.

Dec. 2—House completed the petition to force the Wage Bill from the Rules Committee.

Dec. 6—The Senate Agriculture Committee reported favorably the $50,000,000 Seed Loan Bill; the House passed the holiday mileage resolution and tabled the resolution asking for the government's position in the Far Eastern crisis.

Dec. 10—House passed Jones Farm Bill by vote of 267 to 130.

Dec. 13—House voted, 282 to 123, to take up the Wage Bill.

Dec. 14—House members completed the petition to bring to the floor the Ludlow war referendum resolution.

Dec. 15—The House debated the Wage Bill and rejected, by vote of 162 to 131, a substitute favored by the A. F. of L.; Senatorial group started a "coalition" movement to regain Congress's power, offering a recovery program.

Dec. 16—Congressmen shunned the Senatorial group's "coalition" recovery program.

Dec. 17—The Senate passed the Pope-McGill Farm Bill; the House voted to recommit the Wage Bill.

Dec. 18—The House, by vote of 324 to 23, passed the Steagall Housing Bill.

Dec. 20—The Senate agreed to postpone to the next session the debate on the anti-lynching bill; ratified the international Sugar Quota Treaty; President Roosevelt in a conference with Congress leader chided them for session's lack of accomplishment, set new goals.

Dec. 21—Special session adjourned sine die with record of no important legislation actually enacted.

DOMESTIC TRADE

Aug. 25—Postmaster General Farley predicted a net postal surplus for 1937, saying Roosevelt policies had increased prosperity.

Aug. 31—Federal Trade Commission cited seventy baking concerns, flour mills and trade bodies on charges.

Sept. 6—Commission cited 150 manufacturers of buckles and buttons in price-fixing proceedings.

Oct. 4—Federal trial of forty-six oil executives and twenty-three petroleum concerns on charges of price-fixing began at Madison, Wis.

Oct. 6—Attorney General Cummings stressed need for revision of the anti-trust laws.

Oct. 21—Postmaster General Farley scored "panic strategists" who denied the administration brought recovery.

Oct. 31—Federal Trade Commission, in annual report, renewed pleas for broadening of laws to prevent monopolies.

Nov. 1—The President at Hyde Park talked with advisers on the questions of tax revision and the business situation; Bureau of Agricultural Economics predicted the current business recession would run well into 1938.

Nov. 19—The President directed the Federal Trade Commission to ascertain whether monopolies had influenced the rise in living costs.

Nov. 22—Senator Vandenberg urged ten modifications of Roosevelt policies as the only way to aid business recovery.

Nov. 23—The President conferred with Wendell L. Willkie and with Chairman McNinch of the Federal Power Commission on moves to spur a building drive in public utilities.

Nov. 24—The President discussed utility policies with Floyd L. Car-

lisle, chairman of the boards of the Consolidated Edison Company and the Niagara Hudson Company, after which the Edison groups announced plans for an outlay of $112,000,000 in two years.

Nov. 28—The President, en route to Florida, discussed with Robert H. Jackson of the Department of Justice the tightening of control over monopolies.

Nov. 3—Mr. Willkie submitted to the President proposals for a truce between the New Deal and utilities; Senators Borah and O'Mahoney introduced bills for licensing and drastic regulation of large corporations.

Dec. 1—Attorney General Cummings instituted anti-trust proceedings against the Western Union Telegraph Company and the Postal Telegraph and Cable Corporation, and subsidiaries.

Dec. 7—The President, in a press conference, asserted that the statement that the business recession was getting worse was "just an assumption."

Dec. 9—Manufacturers in convention in New York invited the Government to join with industry and labor in a fight on the depression.

Dec. 12—Federal Reserve Board attributed slump to uncertainty and maladjustments.

Dec. 17—Attorney General Cummings asked for funds to widen his anti-trust drive; some processors of farm products faced action.

Dec. 29—Robert H. Jackson, assistant attorney general, declared that the government in the current business recession was facing a general strike by big business against the New Deal.

Dec. 30—Secretary Ickes, in a radio address, declared a fight to a finish on "big business" to balk a "strike of capital."

Dec. 31—The Federal Trade Commission ordered the National Federation of Builders' Supply Associations to cease and desist from practices tending to diminish competition and increase prices of building supplies.

FLOOD AID

Aug. 30—President Roosevelt urged four New England States to revise their compact to speed flood aid.

FOREIGN RELATIONS

Sept. 1—Secretary Hull asserted that the United States was ready to join in any "genuine" disarmament conference.

Sept. 4—He said that German-born and all naturalized citizens owed the United States full allegiance.

Sept. 8—The Navy Department warned American shipping of dangerous conditions in the Mediterranean.

Oct. 5—President Roosevelt, in a Chicago speech, urged concerted action for peace and suggested "quarantine" for war aggressors; Secretary Hull rushed copies of the President's speech to diplomats abroad for study by foreign governments.

Oct. 9—State Department officials met in Mexico City to study treatment of American business interests in Mexico.

Oct. 11—J. Theodore Marriner, American Consul General in Syria, was slain by a disappointed applicant for a visa.

Oct. 21—The United States joined in attempting to settle the Honduras-Nicaragua dispute.

Oct. 22—Secretary Hull denounced treaty-breakers in a speech at Toronto.

Nov. 2—The United States rejected a bid to Cuba to join with American nations in mediating the Spanish conflict.

Nov. 11—The United States adopted a hands-off policy with regard to the Brazilian situation; State Department, following example of Britain, decided to reopen its consulate at the Spanish Insurgent port of Bilbao.

Nov. 15—President Roosevelt accepted invitation to mediate the dispute between Haiti and the Dominican Republic.

Dec. 7—William E. Dodd resigned as American Ambassador to Germany; Hugh R. Wilson named to succeed him.

Dec. 8—Joseph P. Kennedy chosen by President Roosevelt to be the next American Ambassador to Great Britain, illness forcing Ambassador Robert W. Bingham to retire.

Dec. 18—Mr. Bingham died in a Baltimore hospital; the Dominican Republic agreed to a plan for a peace conference on Washington on dispute with Haiti.

Dec. 20—President Roosevelt praised the Dominican Republic for submitting its dispute with Haiti to treaty procedure.

Dec. 21—Former Secretary of State Stimson vigorously opposed Ludlow plan for holding national war referendum before declaring war; Count St. Quentin named as French Ambassador to the United States.

FOREIGN TRADE

Sept. 19—British Foreign Secretary Anthony Eden voiced hopes for an Anglo-American trade pact.

Oct. 4—Secretary Hull called shoe industry protests against proposed trade pact with Czechoslovakia misleading propaganda.

Nov. 11—Assistant Secretary Sayre warned that "uneconomic trade barriers forge thunderbolts of war."

Nov. 18—Mr. Hull formally announced that the United States and Great Britain had agreed to negotiate an unconditional most-favored-nation reciprocal trade agreement covering the United Kingdom and this country.

Dec. 17—The United States signed a temporary trade agreement with Italy to supplant an old treaty.

GOVERNMENT REORGANIZATION

Oct. 31—James Roosevelt, son of the President, conferred with eighteen heads of Federal agencies, starting his "clearing house" policy.

Nov. 12—Former President Hoover asserted that the Government Reorganization Bill would substitute political rule for civil service.

Nov. 21—Secretary Ickes, in his annual report, supported the bill to create a Department of Conservation for "major Federal" purposes.

Dec. 25—Senator Byrd urged that the office of Controller General be kept in any government reorganization plan.

HOUSING

Sept. 2—President Roosevelt signed the Housing Authority Act of 1937.

Sept. 18—Secretary Ickes urged States and cities to form local housing authorities to benefit by the new act.

Sept. 20—Secretary Ickes expressed favor for decentralization in administering the new housing program.

Oct. 18—President Roosevelt appointed Nathan Straus to direct the new Federal housing and slum-clearance program.

Nov. 3—Mr. Straus, taking over his duties, asserted that he aimed to cut rents in PWA housing.

Nov. 10—President Roosevelt called in business and financial leaders to work on details of a housing drive.

Nov. 12—Mr. Roosevelt demanded lower interest and construction costs to stimulate residential building.

Nov. 29—President Roosevelt sent a special message to Congress calling for housing legislation; he called for a private housing drive expending $16,000,000,000; Wagner-Steagall Housing Bill was introduced to carry out recommendations by the President.

Dec. 2—Nathan Straus told a Federal housing conference that funds for cities would soon be earmarked.

Dec. 8—He tentatively allotted $30,500,000 for housing to eight cities.

Dec. 10—He earmarked $41,100,000 to ten cities for housing.

Dec. 11—Mayor La Guardia conferred with Mr. Straus and obtained a pledge for quick action on housing for New York City.

Dec. 16—Wagner-Steagall Bill to spur home building was favorably reported to the House.

Dec. 17—President Roosevelt agreed to the Straus plan to ease provisions of the Wagner slum-clearance act where cities were unable to pay their share.

Dec. 18—The House passed the Wag-

ner-Steagall Housing Bill by vote of 324 to 23.

Dec. 21—The Senate passed the Housing Bill by vote of 60 to 4, too late to catch the House conferees before Congress adjourned.

Dec. 23—Nathan Straus earmarked $18,000,000 for low-cost housing in New York.

JUDICIARY

Aug. 25—President Roosevelt signed the compromise court bill; Postmaster General Farley declared that voters would take care of "anti-court" Senators, without a call for "reprisals."

Aug. 28—Senator Burke challenged the President and Mr. Farley to attempt a purge of Democratic court plan foes.

Sept. 11—The Scottsboro case again went back to the Supreme Court, Haywood Patterson appealing from his 75-year prison term sentence.

Sept. 13—Hugo L. Black's entry into the Ku Klux Klan was described by a reporter from "archives" of that organization; ouster of Justice Black from the Supreme Court for his alleged Klan membership was held impossible by Senators who opposed his confirmation.

Sept. 14—President Roosevelt, it was revealed, appointed Senator Black to the court unaware of his link to the Klan; Senators declared that Mr. Black owed the President and the nation an explanation of his Klan membership.

Sept. 15—Senator Walsh called upon Justice Black to repudiate the Klan.

Sept. 17—President Roosevelt challenged his foes on the court reform issue.

Sept. 18—Accepting President Roosevelt's "challenge" on the court, Senator Burke called for "battle" in behalf of the Constitution.

Sept. 22—Attorney General Cummings denied that it was his duty to investigate Mr. Black, saying it would have been an "impertinence."

Sept. 24—New York transit companies appealed to the Supreme Court to recover taxes levied for relief of the unemployed.

Sept. 27—Justice Black's appointment was assailed by the convention of the American Bar Association.

Sept. 28—Detractors of Justice Black were assailed by Senator Smathers as politically inspired; report presented by Chief Justice Hughes challenged criticism of delays in courts, using the Attorney General's own figures.

Sept. 29—Mr. Cummings called the Hughes report a "complete capitulation" to the President; Justice Black, returning from Europe, made clear that he would not resign; he parried questions about the Klan.

Oct. 1—Justice Black admitted that he had joined the Klan, but said he had resigned since he became Senator.

Oct. 4—Justice Black took his seat on the bench; two challenges were made of his eligibility.

Oct. 5—He participated for the first time in a Supreme Court conference on the petitions pending before it.

Oct. 11—Challenges on his eligibility were rejected by the court; the Court agreed to review tests of the National Labor Relations Board and also of tax immunities.

Oct. 18—The court refused to review a contest on the New York law against breach of promise suits; Florida oil men lost in their fight against the SEC.

Oct. 25—The Court denied a review to Haywood Patterson, Negro in the Scottsboro case; the court agreed to review the Duke fight on PWA grants for public power plants.

Nov. 3—Florida oil men challenged Justice Black's eligibility to act on their petition for a rehearing.

Nov. 7—Albert Levitt, in letter to President Roosevelt, urged him to start an ouster suit against Justice Black.

Nov. 8—Mr. Black lined up with three liberals of the court in opposing a majority of five who voted against Federal taxation of bonuses given employees of the Universal Oil Products Company; the court rejected the Florida oil men's at-

tack on Justice Black; it also upheld the right of States to tax outside concerns for the right to do business.

Nov. 11—The court, in a 6-to-3 decision, backed the powers of the State in Illinois bankruptcy case; attacks on Black lost.

Nov. 16—Newton D. Baker, as counsel for Alabama utility concern, challenged PWA loans in the Supreme Court.

Nov. 18—The court heard arguments in the fight for payment of interest on gold clause liberty bonds despite redemption call.

Nov. 26—Representative Vinson of Kentucky and Professor Henry W. Edgerton of Cornell were nominated as associate justices and D. Lawrence Groner of Virginia as chief justice of the Court of Appeals of the District of Columbia.

Nov. 29—The Pacific Gas and Electric Company argued in the Supreme Court that Congress, but not the court, would change the basis of utility valuation.

Dec. 6—The court upheld States' taxes on gross income of contractors on government dams, and upheld the government's right to bring the anti-trust suit in New York against the Aluminum Company of America.

Dec. 7—Supreme Court heard argument on the Alabama and Duke power suits against Federal grants.

Dec. 11—President Roosevelt named W. E. Treamor of Indiana for justice of Federal Circuit Court of Appeals.

Dec. 13—The Supreme Court upheld the stoppage of interest in the calling of Liberty Loan gold bonds; it rejected a plea for a review of the sit-down strike issue in Apex Hosiery strike.

Dec. 14—Electric Bond and Share Company asked the court to review a ruling requiring registration.

Dec. 20—Use of testimony based on wire-tapping was forbidden in a decision by the Supreme Court.

LABOR

Aug. 28—Bethlehem Steel Corporation was ordered before National Labor Relations Board on charges based on C.I.O. group's complaint.

Aug. 31—NLRB defied Federal court decree upholding A.F.L. pact at Ambridge, Pa.; ordered a poll.

Sept. 1—A.F.L. condemned NLRB for voiding contract at Ambridge.

Sept. 3—John L. Lewis warned President Roosevelt to support the C.I.O. or face a bolt from the Democratic party.

Sept. 4—President Roosevelt, in Labor Day speech, charged that both sides had made mistakes in recent strikes; Judge Biggs at Wilmington refused to bar the NLRB poll at Ambridge.

Sept. 5—President Roosevelt barred strikes by Federal employees, but upheld organization for "fair" conditions.

Sept. 7—President Roosevelt accepted the resignation of Edward F. McGrady as Assistant Secretary of Labor, praising his services.

Sept. 10—Both the A.F.L. and C.I.O. warned the NLRB to rule on seamen's election in their favor.

Sept. 11—NLRB backed the C.I.O. for a speedy vote among seamen and rejected the A.F.L. plea for delay.

Sept. 15—President Roosevelt and John L. Lewis had a "pleasant talk" at the White House; both remained silent later.

Sept. 17—President William Green of the A.F.L. accused the C.I.O. of making large campaign gifts in effort to "purchase" favors.

Oct. 1—William Green declared open war on the C.I.O.

Oct. 4—William Green, opening the A.F.L. convention, announced war to "wipe out" the C.I.O.

Oct. 5—The C.I.O. obtained 600 members among employees of the Treasury Department in an organization drive; Chairman Madden of the NLRB told the A.F.L. that the board had not favored the C.I.O. over the A.F.L.

Oct. 11—A.F.L. convention authorized expulsion of the C.I.O.

Oct. 13—A.F.L. demanded that the President purge the NLRB as "favoring" the C.I.O.

Oct. 17—President Roosevelt con-

ferred with Miss Perkins on labor problems as she visited Hyde Park on her own plan.

Oct. 25—A.F.L. and C.I.O. delegations began conferences intended to end dual labor organizations; President Roosevelt, in a letter said the Wages and Hours Bill would pass and asked for State aid in the administration of the law.

Oct. 26—C.I.O. offered terms for organized labor peace which were said to be repugnant to the C.I.O.

Oct. 27—Deadlock halted the labor peace parley as the C.I.O. rejected the counter-proposal of the A.F.L.

Oct. 30—Senator Copeland ordered Senate agents to obtain all data on labor disputes aboard merchant marine ships.

Nov. 5—Labor heads admitted a gain toward peace as the A.F.L.-C.I.O. conference explored industries where vertical unionism might be acceptable.

Nov. 7—Secretary Perkins, in a plea for older men, asserted that the best workers of the WPA averaged 47 years.

Nov. 8—A.F.L. and C.I.O. discussed naming subcommittee on jurisdiction, but no agreement was reached.

Nov. 11—Secretary Perkins opposed the Wages and Hours Bill as "too flexible"; new fight over the measure loomed in the House.

Nov. 14—Mrs. Elinore M. Herrick defended the fairness of the NLRB; feared attacks on it would add to industrial strife.

Nov. 17—The House Labor Committee voted, 19 to 2, to press its fight for action on the Wages and Hours Bill.

Nov. 18—Labor bloc in the House mapped a revolt to force the Wages and Hours Bill to the floor for action.

Nov. 22—William Green urged a halt on the Wages and Hours Bill, denouncing its board plan on the basis of NLRB experience.

Nov. 23—Leadership of the House was balked in its effort to budge the Wages and Hours Bill out of the Rules Committee.

Nov. 25—Wages and Hours Bill supporters in the House intensified their drive for signatures to a petition to force the measure out of the Rules Committee.

Dec. 2—William Green and John L. Lewis met to canvass the possibilities of a labor peace pact, their first meeting in months; the House completed the petition to force the Wages and Hours Bill from the Rules Committee.

Dec. 3—The A.F.L. recommended laws fixing a forty-hour week and a minimum wage of 40 cents an hour.

Dec. 7—Governor Martin of Oregon ordered an employees' election to end the lumber war between the A.F.L. and C.I.O.

Dec. 9—The House Labor Committee dropped the five-man board plan from the Wages and Hours Bill, and recommended putting control in the Labor Department.

Dec. 13—The House voted, 282 to 123, to take up the Wages and Hours Bill for immediate consideration.

Dec. 14—Dissension split supporters of the Wages and Hours Bill as the House closed debate and neared a vote.

Dec. 15—The House rejected, by vote of 162 to 131, the substitute for the Wages and Hours Bill favored by the A.F.L.

Dec. 16—The A.F.L. urged revision of the "highly objectionable" Wages and Hours Bill by the House Labor Committee; John L. Lewis said the A.F.L. must take in all of the C.I.O. or none.

Dec. 17—The House, by vote of 216 to 198, recommitted the Wages and Hours Bill to the Labor Committee.

Dec. 21—The Senate Civil Liberties Committee reported that industrial spies endangered the business fabric; committee of A.F.L. and C.I.O. abandoned its peace negotiations.

Dec. 22—Secretary Wallace urged the House farm group, in its own interest, to back the Wages and Hours Bill in the coming session.

Dec. 23—The NLRB found the Ford Motor Company guilty of alleged violations of the Wagner Act; the

Ford Company planned a court fight.

MARITIME COMMISSION

Aug. 25—The Maritime Commission is neutral to unions, Chairman Kennedy told President Green of the A.F.L., but condemns sit-down strikes.

Aug. 29—The commission set fireproof safety as the first subsidy requirement for new merchant marine fleet.

Sept. 10—The commission instructed the captain of the American steamship *Algic* at Montevideo to put his crew in irons if the men refused to perform their duties.

Sept. 12—Chairman Kennedy asserted that the government's merchant marine program was threatened because of the "apparent inability" of some private operators to finance their share of construction costs.

Sept. 23—The commission refused to grant demands of maritime unions whose members were in the Far Eastern and Mediterranean trades for a bonus of $300 a voyage for each member of the crew, but voted a $50 cash bonus to officers and seamen of government operated ships entering these so-called "war zones."

Oct. 22—It signed contract for $15,750,000 "safest" liner to replace the *Leviathan*.

Nov. 9—Chairman Kennedy issued the special report to Congress by the commission on its economic survey of American shipping, recommending broad reforms to revive "a very sick industry," advised an increase in ship subsidies, and urged a number of amendments to liberalize the Merchant Marine Act.

Nov. 30—Chairman Kennedy summoned twenty-seven delegates from twenty-seven American ports to Washington for a conference on twenty-three basic routes abroad.

Dec. 2—Application of Rail Labor Act to shipping recommended by new Copeland bill and by Chairman Kennedy.

Dec. 10—The commission approved the sale of the *Leviathan* by the United States Lines to British firms for scrapping.

Dec. 16—Fourteen members of the *Algic's* crew, who started a sit-down strike on a freighter, were found guilty of mutiny.

MONETARY

Sept. 12—The Treasury, on recommendation of the Federal Reserve Board, freed "sterilized" gold to save easy money.

Sept. 20—Secretary Morgenthau began conversations with Sir Frederick Phillips of the British Exchequer.

Sept. 26—Federal Reserve Board further eased bank loans by liberalizing eligible list for commercial paper.

Nov. 1—Federal Reserve Board revealed that there had been a decrease in the gold holdings of the United States; rumors of gold price rise depressed the dollar.

Nov. 4—The dollar continued to decline, revealing a heavy outflow of capital from this country.

Nov. 6—Rush for gold by Europeans hurt the dollar, which financiers abroad feared might be devalued.

Nov. 25—Senate Agriculture Committee, in a formal report on the Jones-McGill Farm Bill, urged action on the dollar; Senator Bridges urged an immediate hearing on a bill to repeal the President's power to issue $3,000,000,000 in paper money.

Nov. 26—Federal Reserve System, continuing its credit expansion drive, purchased $9,300,000 in a week.

Dec. 9—Gold continued to flow abroad as foreign banks converted dollar balances.

Dec. 12—Federal Reserve Board gave direct discount privilege to installment-buying paper due in ninety days or less.

Dec. 13—Intimations by a high official that the London international silver agreement, expiring Dec. 31, 1937, would not be renewed by the United States.

NAVY

Sept. 21—The United States Fleet reorganized along tactical lines in orders transferring air squadrons and destroyers.

Nov. 3—Five naval fliers died as a bomber and a pursuit plane crashed in midair.

Nov. 6—Secretary Swanson urged increased naval appropriations to add men for new warships and increase naval pay.

Nov. 7—Admiral Leahy, Chief of Naval Operations, reported to Congress that the naval construction program had been slowed by strikes.

Nov. 9—President Roosevelt designated Admiral Bloch to become commander in chief of the United States Fleet on Feb. 1, 1938.

Dec. 7—Navy Department awarded the New York Shipbuilding Company a $20,680,555 contract for two auxiliary naval vessels.

Dec. 10—The Navy Department revealed that fleet manoeuvres in the Pacific early in 1938 would use a record force of sea and air craft and cover an area extending from the Aleutian Islands possibly to Samoa.

Dec. 12—U.S. gunboat *Panay* sunk by Japanese planes in the Yangtze.

Dec. 20—Secretary Hull informed Senator Smathers that the United States would not withdraw its naval forces from China during the present emergency.

Dec. 24—Plans revealed for increasing naval air forces in Alaska.

Dec. 28—President Roosevelt, in a letter to Chairman Taylor of House Appropriations Committee, revealed he would ask Congress for enlargement of naval building program beyond the $564,406,461 earmarked for fiscal year 1939; four American cruisers ordered to Australia.

NEUTRALITY

Aug. 30—Senator Vandenberg advocated stricter neutrality laws.

Aug. 31—Five peace groups opened a drive at Washington for enforcement of the Neutrality Act.

Oct. 13—Representative Tinkham, visiting Geneva, cabled Secretary Hull that the President should be "impeached" for "failing" to invoke the Neutrality Act in the Sino-Japanese conflict.

Nov. 17—President Roosevelt's delay in invoking the Neutrality Act in the Sino-Japanese conflict was decried in the House.

Nov. 25—Senator Lodge sought to curb the power of the President under the Neutrality Act, holding the present law a peril.

POLITICAL

Sept. 4—Senator Burke named Vice President Garner as his choice for the Democratic Presidential nomination in 1940.

Sept. 18—Senator Vandenberg urged a coalition of men of all parties to fight the Roosevelt-Farley–La-Follette party."

Oct. 18—Proposals for a mid-term rally won backing in a Republican meeting at Washington; Senator Borah declared against it.

Oct. 18—Representative Miller defeated Governor Miller, New Dealer, in Arkansas election to fill Senate vacancy caused by death of Senator Robinson.

Oct. 19—Alfred M. Landon called on the Republican party to unite to "curb" power of the President and "one-man rule."

Oct. 24—Former President Hoover in a talk called on Young Republicans to "sell" their party to the people.

Oct. 26—Former President Hoover in a speech urged justice for the middle class as the "forgotten men."

Dec. 9—Governor Aiken of Vermont, scanning Republican prospects, favored the "coalition" proposal.

Dec. 10—Alfred M. Landon, in Washington for the Gridiron Club dinner, issued a statement removing himself as a possible Republican candidate in 1940, but planned political activity.

Dec. 13—Republican National Committee's executive committee met at St. Louis to choose a policy committee and name its chairman.

Dec. 16—Former President Hoover, in Chicago, demanded relief from politics "stagnating billions" as the

way to end the recession; Republicans at St. Louis selected Dr. Glenn Frank as chairman of policy committee to draft a party program.

POWER

Sept. 7—Federal Court of Appeals prevented Federal Power Commission hearing on six units of Associated Gas.

Sept. 14—The TVA attacked rate-making barriers.

Sept. 17—Federal Power Commission planned a campaign to rid the utilities of interlocking directorates.

Sept. 26—Federal Court ruled for TVA in three motions involving suit by utility companies.

Oct. 2—Chamber of Commerce of United States condemned plan for more regional-planning agencies modeled after TVA.

Oct. 27—President Roosevelt agreed to a basis for amortizing the cost of the Bonneville Dam in forty years; Federal Power Commission sent questionnaire to all utilities on assets and ordered an investigation of their control.

Nov. 4—Chairman NcNinch of the Federal Power Commission told investment bankers that Federal regulation had strengthened utility finances.

Nov. 7—Federal Power Commission filed brief in the Supreme Court in a move for new utilities-valuation basis.

Nov. 9—President Roosevelt offered aid to the utilities if they would adopt "common law" principle of valuations.

Nov. 15—The TVA was challenged as unconstitutional by eighteen utilities, starting major test case in Chattanooga court.

Nov. 23—White House sent to Congress a report of the New York Power Authority criticizing alleged propaganda by utilities corporations.

Dec. 1—Wendell L. Willkie, utility leader, asserted his aim was to settle TVA litgation without court fight to "bitter end."

Dec. 10—Governor Aiken of Vermont voiced New England opposition to the Regional Agencies Bill as encroaching on States' rights; Wendell L. Willkie testified that the TVA had rejected truce offers.

Dec. 19—Chamber of Commerce of the United States opposed regional-planning measures, urging conservation under existing Federal agencies.

Dec. 20—Federal Power Commission blocked $8,700,000 financing plan submitted by Mountain States Power.

RAILROADS

Aug. 25—Railroads refused demand of brotherhoods for a 20 per cent wage increase; 250,000 threaten to strike.

Aug. 28—Federal mediator at Chicago interviewed both sides in effort to settle pay clash.

Aug. 31—Chairman of I.C.C. advocated unification of all railroads.

Sept. 3—Four New England Governors obtained permission from I.C.C. to intervene in New Haven's reorganization.

Sept. 29—RFC approved a plan for the Missouri Pacific leaving control with the Alleghany Corporation.

Oct. 22—I.C.C. granted a freight rate rise to bring $47,500,000 new revenue to Class I railroads.

Oct. 29—Railroads appealed to the I.C.C. for a rise of $508,000,000 in freight rates to offset their own higher costs.

Nov. 1—Chairman Jones of the RFC advised the railroads to rely on savings rather than stressing an increase in rates.

Nov. 3—I.C.C. permitted New York State to enter proceedings for lower freight rates brought by nine Southern States.

Nov. 4—I.C.C. ordered a hearing on rates charged on coal shipped north from southern mines.

Nov. 8—Senate committee began investigation of reorganization plan for Missouri Pacific Railroad.

Nov. 12—Senate committee investigating Missouri Pacific reorganization adjourned indefinitely.

Nov. 29—Hearing on freight rate increases opened before the I.C.C.

Nov. 30—Contended at the hearing

that an outlay of $900,000,000 would be possible if the roads were permitted to raise their rates.

Dec. 3—I.C.C. granted passenger fare increases to railroads operating west of the Mississippi and Lake Michigan.

Dec. 10—I.C.C. barred an immediate rate rise; President Roosevelt asserted the nation must act to save the carriers by spiking the agitation for Government ownership of the railroads; the I.C.C. approved the acquisition of the Nickel Plate and Erie roads by the Chesapeake & Ohio.

Dec. 11—I.C.C. acted to speed rail freight rate hearing, setting Jan. 17, instead of Feb. 7, for final arguments.

Dec. 13—Chairman Miller of the I.C.C. favored President Roosevelt's plan for rehabilitation of railroads through the commission.

Dec. 14—Railroads attacked the increase in coal rates and won a hearing by the commission.

Dec. 16—Chairman Jones announced that the RFC was ready and willing to lend funds to the railroads to meet their operating needs.

Dec. 18—I.C.C. granted an additional increase in freight rates, estimated to yield $20,000,000 annually.

Dec. 23—The I.C.C. put the original value of American railroads at $3,441,862,021 and estimated their cost of reproduction as $26,238,856,914, except land and rights.

RELIEF

Aug. 23—Committee of WPA workers saw Administrator Hopkins, but was told there was little hope of restorations.

Aug. 24—President Roosevelt denied plea of "job marchers" for WPA reinstatements, but said that relief job cuts were ended.

Oct. 18—President Roosevelt, in a plea for support of local charities, declared the Government must cut relief more to avoid tax rise.

Nov. 15—Cities need more Federal funds for relief this winter, Mayor La Guardia asserted at Mayors' conference at Washington.

Nov. 17—Mayors' conference demanded more Federal funds for unemployment relief.

Dec. 9—Administrator Hopkins announced an increase of 350,000 in WPA workers to meet growing need for relief.

Dec. 22—WPA reported that it spent $1,397,380,264 during first eleven months of 1937.

SECURITIES

Aug. 24—The SEC pressed criminal charges against a promoter for the first time under the Securities Act.

Sept. 9—Landis, retiring chairman of SEC, reviewed its achievements, declaring public interest had been served and a better understanding achieved.

Sept. 10—The SEC and Federal Reserve Board put careful watch on the break in stock market values.

Sept. 13—Landis replied to President Gay of the New York Stock Exchange by saying that odd-lot buyers furnished a market cushion.

Sept. 15—Gay, replying to Landis, renewed his plea for an impartial study of the stock market.

Sept. 20—SEC filed a brief in Federal court resisting a test of the Public Utility Act.

Sept. 21—William O. Douglas was chosen to succeed Landis as SEC chairman.

Sept. 23—Douglas pictured the SEC as the "investor's advocate" and announced a policy of swift and direct action.

Sept. 24—Stock prices in New York declined to lows for the year in a general selling wave.

Oct. 27—Federal Reserve Board cut stock margins to 40 per cent for buyers but urged a 50 per cent margin on short sales.

Oct. 28—SEC asked the New York Stock Exchange to adjust rules to meet margin requirements of the Federal Reserve Board.

Oct. 29—Stock Exchange leaders, in a three-hour meeting with the SEC, gave their views on the commission's policies.

Nov. 3—Mathews of the SEC appealed for greater self-regulation of investment bankers as an aid to administration of the law.

Nov. 5—President Roosevelt told a press conference that stock speculation was "dangerous."

Nov. 16—SEC, defining policy on utility "death sentences," declared for integrations by "evolution."

Nov. 23—SEC warned Stock Exchanges to adopt more self-regulation or face government curbs.

Dec. 4—Margin requirements were liberalized and simplified by the Federal Reserve Board, effective Jan. 1, 1938.

Dec. 8—SEC amended its investment trust rules to require list of holdings in prospectus of some registrants.

Dec. 10—President Roosevelt named Jerome N. Frank and J. W. Hanes to be members of the SEC.

Dec. 17—SEC suggested to the Stock Exchange that the commission investigate stock commissions.

Dec. 20—Over-counter dealers in parley with SEC urged legislation to give official status to various groups.

Dec. 30—The SEC reported to Congress that the national Stock Exchanges had not yet demonstrated their capacity to police their markets effectively against manipulation and deceptive practices.

Dec. 31—The SEC formally accused individual partners in E. F. Hutton & Co., New York stock brokers, of manipulation of Auburn automobile stock.

SOCIAL SECURITY

Oct. 11—Miss Mary W. Dewson, member of the Social Security Board, said the Board was considering the question whether the Social Security Act might be amended to provide annuities for widows of wage earners instead of the lump sums they now receive.

Oct. 29—Board announced that more than 34,000,000 social security numbers, including 4,000,000 representing applications for old age benefits received since July 1, had been assigned by Sept. 30, and that the unemployment trust fund in the Treasury amounted to $448,482,983.

Oct. 30—Board announced that $252,439,339 had been issued in social security grants since Feb. 1, 1936, of which $218,780,088 represented aid to the aged.

Nov. 5—Advisory council began work on plans to extend social security benefits to 13,000,000 more.

Nov. 6—Advisory council adjourned divided over recommendation concerning the social security reserve fund.

Nov. 28—Treasury simplified the social security tax system, putting the returns and payments on a quarterly basis.

Dec. 16—President Roosevelt sent to Congress amendments to broaden the Social Security Act.

TAXATION

Aug. 26—President Roosevelt signed the Tax Loophole Bill.

Aug. 27—The Treasury simplified income tax blanks to avoid confusion.

Sept. 16—Governors of several States, after a White House conference, predicted that the President would aid in the tax duplication fight.

Sept. 19—Secretary Morgenthau assigned an aide to overhaul the Internal Revenue Bureau and speed tax inflow.

Oct. 6—President Roosevelt proclaimed a pact with Canada for exchange of income tax data withheld by aliens.

Oct. 22—The President urged delay in tax revision until the next regular session of Congress, pending study by legislative committees.

Oct. 29—The President, silent on reports that tax cuts were under consideration, cited low-paid millions.

Nov. 4—The Ways and Means Committee placed profits tax relief at the top of the list, after a conference with Roswell Magill, Under-Secretary of the Treasury.

Nov. 11—Senator Harrison, chairman of the Senate Finance Committee, insisted that profits tax revision "must" be enacted.

Nov. 12—Chairman O'Connor of the House Rules Committee urged immediate action by Congress on tax revision; Chairman Jones of the RFC advocated profits tax cut.

Nov. 16—Chairman Harrison assailed "penalty" taxation as curbing business expansion.

Nov. 17—Movement to revise the profits tax gained headway in the Senate as the President's legislation program lagged.

Nov. 26—The President declared he was for tax revision when Congress was ready.

Nov. 29—Chairman Harrison, "admitting mistakes," assured revision of the profits and capital-gains taxes; drafting of tax legislation for action in the next regular session began in a House subcommittee.

Dec. 1—Ways and Means subcommittee considering tax revision tentatively adopted a plan to simplify the estate and gift tax system, lowering exemptions to yield an estimated $15,000,000 additional annual revenue.

Dec. 7—Board of Tax Appeals absolved the late Andrew W. Mellon from charges of fraud in connection with his 1931 income tax return and cut the government claim against his estate to $414,000.

Dec. 8—Brookings Institution advocated the repeal of the profits tax as hampering investments; Ways and Means subcommittee dropped the idea of taxing salaries and securities now exempt.

Dec. 10—Approval of tax-revision program by President Roosevelt and Secretary Morgenthau was indicated by House leaders.

Dec. 22—Internal revenue collections for first eleven months of 1937 reported as $2,060,748,577, an increase of $674,980,150 over corresponding period of 1936.

UNEMPLOYMENT

Aug. 30—President Roosevelt signed the bill authorizing a Federal census of the idle.

Sept. 16—President Roosevelt appointed John D. Biggers to be administrator of the unemployment census.

Sept. 22—President Roosevelt approved plans recommended by Biggers for counting the unemployed through a postal census; allotted $5,000,000 from relief appropriations for that purpose.

Sept. 27—White House parley decided to start the unemployment census on Nov. 16.

Oct. 22—Relief Administrator Hopkins ordered his own census of the jobless.

Oct. 26—Secretary Perkins asked the States to aid the unemployed not covered by the Social Security Act.

Nov. 14—President Roosevelt, in a radio plea, asked for "national teamwork" to make the unemployment census a success.

Nov. 16—The unemployment census started, using postal facilities.

Nov. 22—Secretary Perkins reported a drop of 80,000 in industrial jobs in October.

Dec. 22—Secretary Perkins revealed that 570,000 lost jobs in industrial employment in November and that weekly payrolls dropped $25,900,000 during the month.

VETERANS

Aug. 29—President Roosevelt vetoed a bill appropriating $294,852 for aid of destitute veterans.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, 3457 Walnut Street, Philadelphia, Pa.

AMERICAN BAR ASSN., 1140 N. Dearborn Street, Chicago, Ill.

AMERICAN POLITICAL SCIENCE ASSN., 205 Bennett Hall, University of Pennsylvania, Philadelphia, Pa.

COMMERCIAL LAW LEAGUE OF AMERICA, 111 W. Monroe St., Chicago. Ill.

HONEST BALLOT ASSN., INC., 27 William Street, New York City.

LEAGUE FOR POLITICAL EDUCATION, 123 West 43rd St., New York City.

NATIONAL ASSN. OF LEGAL AID ORGANIZATIONS, School of Law, Duke University, Durham, N.C.

NATIONAL CIVIL SERVICE REFORM LEAGUE, 519 Fifth Ave., New York City.

NATIONAL INSTITUTE OF PUBLIC ADMINISTRATION, 302 E. 35th Street, New York City.

DIVISION IV

STATE GOVERNMENT

STATE ADMINISTRATION AND LEGISLATION

By Henry W. Toll

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ADMINISTRATIVE AND LEGISLATIVE TRENDS

Viewing the year in retrospect, one may find four distinct trends in the field of state administration and legislation. There was a growing emphasis on social legislation of all kinds. This took form in the enactment or broadening of social security laws in every State, in the progress made by housing and planning legislation, in the new labor legislation, in the greater attention to education and health standards, and in the advances made toward crime control.

A second development is found in the realm of state finance. The increased burden put upon governments by their social welfare programs caused additional strain on their treasuries. Consequently, it is not surprising that a majority of the States made larger appropriations than ever before in their history. This in turn taxed their revenue structures and was responsible for the tendency to seek new sources of income and to extend or make permanent so-called "emergency" taxes which had hitherto been regarded as temporary.

In the tendency to reorganize state administrative structure and to improve administration through the adoption of merit systems, the third distinct trend of the year is found. Two States underwent complete structural changes and several others were partially reorganized. In addition, five States adopted state-wide civil service systems in 1937.

Significant from the standpoint of national governmental structure is the fourth trend of the year among the States. This was the rapid advance made by interstate co-operation, through the establishment of Commissions on Interstate Co-operation in 18 States. This made a total of 35 States which have provided this co-operative machinery. (See "National and Interstate Relations of States," pp. 163–167).

Not quite a third of the more than 55,000 bills introduced into the 43 regular sessions became law. Louisiana and Mississippi were the only States which were not in session sometime during the year though the Alabama, Kentucky, and Virginia meetings were 1936 special sessions carried over into 1937. Ten of the States which met in regular session held one extra session during the year, three others each held two special sessions and one, Arizona, had three extra sessions. This represents a considerable decline from the 1936 ten-year high of 43 special sessions in 33 States.

PUBLIC WELFARE[1]

Legislation in the public welfare field indicates a general shift from the 1935 and 1936 concern over enactment of Federal and state social security laws to an emphasis on organization and administration of the laws. The stimulation of Federal grants-in-aid and the necessity of complying with the requirements of

[1] Data furnished by the American Public Welfare Association.

the Federal Social Security Act relating to good administration accelerated the establishment of new state welfare departments and led to changes in existing ones.

Thus, the year witnessed the reorganization of welfare departments in California, New York, Texas, and Utah and the creation of 18 welfare or public assistance departments in Arizona, Arkansas, Florida, Georgia, Idaho, Iowa, Kansas, Michigan, Missouri, Montana, Nevada, New Mexico, Pennsylvania, South Carolina, South Dakota, Tennessee, Washington, and Wyoming. Most of the new statutes provide for a plan of state and county co-operation with actual administration lodged in the local unit and with supervision of standards the responsibility of the state agency.

All but two of the new departments (Idaho and Tennessee) have boards whose powers range from advisory to policy formation and even to executive responsibility. In the appointment of commissioners almost universal emphasis is placed on their training, ability, and public welfare experience. In nearly all cases, staff appointments have been placed on a merit basis.

Included in the duties of most of the new departments are the functions of general relief, old age assistance, aid to the blind, and aid to dependent children. Administration of state institutions is not emphasized in most statutes.

SOCIAL SECURITY

All States except Virginia, which did not meet in regular session in 1937 but which meets in 1938, have enacted plans for old age assistance, aid to dependent children, or aid to the blind that have met the approval of the Social Security Board. In general, these social security laws broaden the scope of public assistance, raise the standard of individual grants, and exhibit a consciousness of state responsibility for those in need which has hitherto been exhibited only through state institutions.

Of the 50 jurisdictions which now have old age assistance, 12 were approved or amended in 1937. Forty jurisdictions now have plans for assistance to dependent children, of which 16 were approved or amended in the year, and 11 of the 37 blind assistance programs were a result of 1937 legislation.

Unemployment compensation laws in conformity to the Social Security Act were enacted in the 13 remaining States (Arkansas, Delaware, Florida, Georgia, Illinois, Kansas, Missouri, Montana, Nebraska, Nevada, North Dakota, Washington and Wyoming), Hawaii, and Alaska, while significant changes were made in the laws of 28 other States. Twenty-one States now have a greater coverage than the Federal minimum, and of these, ten States now cover all employers. Exempted employments are generally the same as those excluded in the Federal act. The type of fund to be used was frequently a matter of controversy but the trend has been toward the pooled fund with merit rating such as a great majority of the plans now include. Only two States have the employers reserve type of fund and five jurisdictions have a combination of the two types. Employers' contributions are the chief source of benefit funds in all jurisdictions and all 1937 laws omitted contributions from workers, while three other States (Indiana, New Hampshire, and Oregon) deleted worker contributions from their laws. Only seven States now require worker contributions.

LABOR LEGISLATION

As a result of 1937 legislation, workers in many occupations in widely scattered States will obtain shorter hours, better pay, safer working conditions and increased disability compensation. State labor legislation has continued to improve. Outstanding progress during the year was made in Illinois and Pennsylvania where a comprehensive revision of labor laws was carried through under the leadership of the state labor departments. Pennsylvania now has one of the most complete labor laws in the country. It has attracted widespread attention because of its drastic 44 hr.

a week maximum hour law which is applicable to both women and men.

Arkansas, Georgia, and Indiana have each co-ordinated the administration of practically all of their laws relating to employment under a state labor department. New powers and responsibilities for safety regulations have been given the Industrial Commission in Florida and the labor commissioners in South Carolina and West Virginia.

"Little Wagner acts," modeled after the Federal Labor Relations Board law, were passed in five States (Massachusetts, New York, Pennsylvania, Utah, and Wisconsin) and defeated in twelve States (Arkansas, California, Colorado, Georgia, Maine, Maryland, Michigan, New Jersey, Ohio, Oklahoma, Oregon and West Virginia) and bring a new type of labor law to the States. While Tennessee and Vermont legislated against the sit-down strike, several States strengthened and extended the conciliation services of their labor departments.

The adoption of laws in five States (Delaware, Indiana, Michigan, Pennsylvania and Washington) providing for compensation for certain occupational diseases raises the total in this field to 21 jurisdictions, of which eight States and the District of Columbia provide blanket coverage.

Minimum wage and maximum hour legislation was given added impetus during the year. Oklahoma became the first State to adopt a general minimum wage law applicable to men as well as women, while the adoption of minimum wage legislation for women in Arizona, New York, and Pennsylvania brought to 22 the number of States having such laws. Maximum hour limits were enacted in six new States, making 19 States which have this provision.

Industrial home work laws were passed in Massachusetts and Pennsylvania, making a total of eight States with such laws. The addition of seven States to the list of those which prohibit the open-market sale of prison-made goods leaves only 19 still without this type of legislation.

Many States passed laws relating to the time and medium of wage payment and to the settlement of claims for unpaid wages.

Chief events in the child labor field were adoption of the basic 16-year minimum age in North and South Carolina, increased restrictions on child labor in some States, ratification of the Federal Child Labor Amendment by Kansas, Kentucky, Nevada, and New Mexico, and action by Missouri, New York, and Vermont prohibiting intrastate sale of products of child labor.

HOUSING

During the year, 11 States enacted new housing authority laws and nine States amended existing ones. Of the 30 jurisdictions which had housing authority legislation at the close of 1937, two had laws which apply to only one city in their respective States, and Rhode Island is the only State which has not granted to housing authorities the right of eminent domain. According to the National Association of Housing Officials, the fact that a number of the laws do not exempt the property of authorities from taxation may prove to be a future stumbling block to the authorities in meeting the conditions necessary for a Federal grant.

One of the most important of the recent additions to housing statutes is the cooperation law which empowers cities and other local governmental units to cooperate with housing authorities in essential ways. During 1937 16 States adopted or amended these laws, the typical ones of which authorize cities to dedicate, sell or lease their property to a housing authority, to provide recreational or other community facilities near housing projects, to provide suitable streets, sidewalks, etc. within project areas, to rezone the city in conformity with housing projects, and to make grants and loans to authorities.

PLANNING AND ZONING

A legislative survey by the American Society of Planning Officials indicates that continued progress was shown in the planning and zoning field when five States enacted new

laws applying to state planning boards, five States amended existing laws, and only Maine abolished its board. Delaware is the only other State which does not have a state planning board. County and metropolitan planning boards were provided for in California and Pennsylvania while enabling legislation for city boards was passed in California, Maine, Minnesota, Nebraska, Washington, and Wisconsin.

Every State has provisions for city zoning and the only changes made in 1937 were amendments to the Indiana and Maine laws. However, county and township zoning, which is now provided for in only about one-fourth of the States, received an impetus in five States. California and Tennessee amended their county zoning laws, Florida passed a general county zoning law, Georgia passed a measure applying to special counties, and Pennsylvania passed a general law providing for county and township zoning.

EDUCATION

In the field of education school finance was again the major problem facing the legislators, and increased state support of schools became one of the notable results of the legislative year. Fifteen States increased their appropriations to schools from general funds and at least as many more passed tax laws which were designed to benefit the schools. Several States established minimum length state-supported school terms and a number of States provided for free textbooks in the schools.

Proposals to improve the teacher's professional status received a great deal of attention and considerable success, chiefly through the enactment of new teacher's tenure and retirement legislation.

A survey made by the National Education Association revealed that of the 21 States which considered teacher tenure bills, ten enacted new or revised laws, leaving only 16 States which have no tenure legislation whatsoever.

The existing laws were revised or extended in California, New York, Pennsylvania, and Wisconsin, while in Florida, Kansas, and Oklahoma the tenure measures protect only to a limited extent. The new Michigan law is permissive in nature and its application depends upon the action of local voters. In Minnesota, Nebraska, and South Carolina, the laws have continuing contract provisions.

The new tenure bills are no more diverse in their principal characteristics than the older ones, and a comparison of this year's successful and defeated bills indicates that no features are generally acceptable while others are usually defeated.

New or completely revised state teacher retirement laws were enacted in Arkansas, Indiana, Montana, Nevada, New Hampshire, New Mexico, Texas, Utah, and Washington while eight other States changed or extended existing plans. Excluding Kentucky, whose 1928 law is still inoperative, 28 States have state-wide teacher retirement systems. All of the new laws, except New Mexico's, provide for a joint contributory reserve plan as a source of funds. In New Mexico, all of the funds are contributed by the State. As in most of the older laws, the 1937 statutes generally set 60 years as the age for optional retirement.

Other important teacher welfare legislation during the year included the enactment of minimum salary laws in New Jersey, Pennsylvania, Tennessee, and Wisconsin, and the revision of certification laws in eight States.

While no new teachers' oath laws were enacted during 1937, at the same time none of the efforts at repeal of existing laws was successful. The Massachusetts House sustained the Governor's veto of a bill to repeal the teachers' oath law in that State.

HEALTH

Outstanding development in the field of public health has been the increasing attention given by both the public and public officials to the venereal disease problem. Legislative action took the form of increased appropriations for this work in several

States and in the enactment of hygienic marriage laws in a number of States. Several States gave their health boards and departments additional regulatory powers.

Following a lead taken by Connecticut in 1935, Illinois, Michigan, New Hampshire, Oregon, and Wisconsin enacted laws requiring that both applicants for a marriage license must have a medical certificate indicating their freedom from venereal disease. Wisconsin's old law was mandatory only on the male applicant. The Oregon law is subject to popular referendum in 1938 and the New Hampshire statute does not become effective until Oct. 31, 1938.

With the enactment of eugenic sterilization laws in Georgia and New Mexico in 1937, 30 States now have such laws in force and applicable in their state institutions as one method of attacking the problem of the feebleminded.

CRIME CONTROL

A milestone in the work of crime control was reached when on Sept. 24, twenty-five States signed and put into operation the interstate compact for the supervision of out-of-state parolees and probationers. This compact was one phase of the four-point legislative program sponsored by the Interstate Commission on Crime of The Council of State Governments. The Commission has also drafted three other model crime bills covering fresh pursuit by police across state lines, simplified extradition procedure, and simplified procedure for securing out-of-state witnesses in criminal proceedings. The fresh pursuit law has been passed in 23 States, the extradition law in 19 States, and the witnesses act in 23 States. In addition to working out procedures and administrative regulations designed to assist the carrying out of these laws, the Commission is continuing to encourage the enactment of each of the model bills in every State. It is also turning its attention to the regulation of firearms and an attack on the marihuana problem.

Minnesota, Missouri, Nebraska, Montana, Tennessee, Texas, and Wyoming, approved in 1937 the uniform narcotic drug act drafted by the National Conference of Commissioners on Uniform State Laws. At the same time a number of other States tightened their narcotic laws.

Many States passed laws making kidnapping a capital offense if the victim is harmed. Arkansas created a Board of Pardons and Parole, Massachusetts increased the membership of its parole board to five, Michigan reorganized its entire penal system, and Tennessee improved its pardon and parole system by providing for the personnel necessary to give close supervision to its probationers and parolees. In South Dakota, the Department of Justice was abolished and its functions shifted. However, Utah established a State Department of Justice and also created a Department of Adult Parole and Probation under the State Board of Corrections.

STATE POLICE SYSTEMS

Increase in the powers and personnel of existing state police forces, reorganization of several departments and the creation of new patrol forces in several States leaves only Florida, Mississippi, and Wisconsin, which have neither a state police nor a highway patrol system. Full police powers have been given to statewide forces in 22 States while 23 others have made provisions for state highway patrol systems.

Patrol systems were increased or strengthened in Arizona, Iowa, Kansas, Montana, North Carolina, North Dakota, Ohio, Oklahoma, Texas, and Wyoming. A new highway patrol system was established in Nebraska, and Georgia created a Department of Public Safety to supervise its new highway patrol system.

State police forces also increased in both size and number. Arkansas placed its police department under a state police commission and the New Hampshire highway patrol was converted into a police department. A consolidation of the police and the highway was made in Pennsylvania which now has a system of motor police of 1,000 men.

Several States strengthened their police forces by the establishment or expansion of bureaus of criminal identification and the broadening of police radio networks.

MOTOR VEHICLE LEGISLATION

Aside from financial aspects of the motor vehicle, principal legislation in this field was directed toward the greater safety of motorists and pedestrians. This action took shape in the passage of drivers' license laws, compulsory accident reporting, safety instructions in schools, financial responsibility legislation, and numerous other regulatory measures.

Ten States (Arkansas, Indiana, Kansas, Maine, Michigan, Nebraska, New Mexico, Oklahoma, Tennessee, and Texas) adopted the standard drivers' license measure contained in the Uniform Vehicle Code approved by the National Safety Council. Georgia, Missouri, and North Dakota approved license laws which do not follow the standard provisions so closely. Although Gov. Horner of Illinois urged the enactment of the model law, the legislature defeated the bill, but gave the courts power to revoke driving privileges in case of conviction for reckless or drunken driving. There are now only six States which do not have any provision for licensing of private operators.

The trend has been toward greater uniformity, along the lines of the Uniform Vehicle Code, and in Iowa and Washington the entire motor vehicle code was revised in the direction of standardization. New or improved laws affecting accident reporting were enacted in Arkansas, Indiana, Iowa, Kansas, Minnesota, Oklahoma, South Carolina, Tennessee, and Washington. Numerous changes were made in speed laws, rules of the road, vehicle inspection, equipment, safety glass, and size and weight requirement, while financial responsibility laws were successful in several States.

"Port-of-entry" barriers which spread rather rapidly in western States during the previous four years have been effectively stopped. No new laws were enacted, several old laws were modified, and reciprocity provisions were enacted in all parts of the country.

As the country becomes trailer conscious, the house-trailer, youngest in the motor vehicle family, is subjected to a multitude of state and local regulation. In order to help avert the rise of a heterogeneous mass of restrictions, the Second Regional Highway Safety Conference, called by the New York Joint Legislative Committee on Interstate Cooperation, established a committee to study and draft a Uniform House-Trailer Code. This was prepared late in the year and its enactment in the various States has been urged.

TAX LEGISLATION

With many state budgets reaching an all time high it is not surprising that the year's tax trend was toward the continuance of so-called emergency taxes and the collection of delinquent property taxes by installment payments and reduced penalties. The two most fruitful sources of state income (sales and gasoline taxes, producing over 40 per cent of the States' tax revenue) continued to be popular. (For fuller tax discussion, see Div. VII, "Public Finance and Taxation").

STATE ADMINISTRATIVE REORGANIZATIONS[1]

Interest in the reorganization of state government received more than usual attention during 1937. Not only did a number of States conduct surveys of their administrative machinery, but many of them made definite progress in the installation of improved management methods.

Tennessee was one of the most outstanding examples of reorganization, at least in terms of a new administrative structure provided by law. In 1923 Tennessee had consolidated a host of boards, commissions, and independent offices into eight departments and took vigorous steps to establish sound financial admin-

[1] Data furnished by Donald C. Stone, Executive Director, Public Administration Service.

istration. Since that time considerable tampering had been done to the original plan and also new services and administrative problems had developed. As a result, Gov. Browning secured the assistance of A. E. Buck of the Institute of Public Administration who, with the assistance of the State Planning Commission, prepared new legislation reorganizing the administrative structure of the State. Two departments were added, making a total of ten, as follows: Administration, Finance and Taxation, Agriculture, Highways and Public Works, Education, Institutions of Public Welfare, Public Health, Insurance and Banking, Labor, and Conservation. The most significant feature of the set-up is the Department of Administration which is composed of the divisions of budget, accounts, personnel, purchasing, local finance and highway patrol. This department, therefore, contains nearly all of the management agencies of the state government. The Department of Finance and Taxation is restricted to revenue administration. The comptroller, appointed by the legislature, is removed from all administrative responsibilities by being given the sole function of post-auditing which is properly a legislative one. The new Reorganization Act (Chapter 33, *Public Acts of Tennessee, 1937*. See also Chapters 10 and 11) re-establishes the principle that the governor should appoint, without confirmation by the legislature, the commissioners who head the various departments and that they should hold office at his pleasure.

One of the difficulties in most state reorganization plans is that they exist on paper only and that the adjustments or new procedures that their effectuation requires are never put into effect. Kentucky has not only enacted a sweeping reorganization plan, but Gov. Chandler has taken vigorous steps to fulfill the purposes of the Act.

The year 1937 witnessed the actual reorganization and installation of most of the new methods contemplated under this 1936 Act. (Governmental Reorganization Act of 1936.) A Department of Finance was established including the installation of the budget, accounting, purchasing and personal procedures. (See Kentucky *Handbook of Financial Administration,* published by Public Administration Service, 850 East 58th Street, Chicago.) The revenue and tax machinery was reorganized under Commissioner of Revenue James Martin, and its administration placed on an up-to-date basis. Drastic reorganization was made of the welfare department which now embraces public assistance, corrections, and the state mental, medical, and penal institutions. Other departments of the State have undergone similar revamping.

On Jan. 25, 1937 the Connecticut Commission Concerning the Reorganization of the State Departments, established by Gov. Cross, submitted its report which provided sweeping changes in the administrative and operating practices of the state. The Financial operations had been both confused and decentralized. For example, authority to purchase had been parceled out to 150 agencies. The Board of Finance and Control, consisting principally of *ex-officio* members, had failed to provide adequate financial planning and expenditure control. The reorganization acts swept aside many of the administrative encumbrances inherited from colonial days. Centralized budget and accounting facilities were placed under the governor. The state civil service system was re-established. The old board of equalization was abolished, with responsibilities for revenue administration placed under a tax commissioner. The Department of Public Works was established and charged with the supervision, construction, and maintenance of public buildings. Connecticut also joined the large list of States which have legislative councils. That the reorganization will receive sympathetic attention is evidenced by the appointment as budget director of Benjamin P. Whitaker who had served as research director of the Reorganization Commission.

Working in a piecemeal but none the less effective manner, Michigan initiated a number of revisions in its administrative system. Gov. Murphy sponsored a number of financial reforms. A comprehensive budget and accounting system is now being devised by Harold Smith, state budget director, with the assistance of Public Administration Service. Paralleling the finance improvements, a statewide civil service system, enacted in 1937, is also being installed. Pursuant to a thorough-going survey of public welfare administration, a reorganization plan was developed but its effectuation was stopped by a petition which will require referendum by the voters in 1938. Other departments are being revamped and a long term program for the construction of state institutions is under preparation.

New York State took additional steps to repair its administrative organization through the consolidation of the state relief administration and the state department of social welfare. The new department has been thoroughly integrated with the state structure. The survey into the character and cost of public education, sponsored by the state Board of Regents, is setting the stage for a general revision of the education system.

Massachusetts has initiated a program of state reorganization by the establishment of a Special Commission on Taxation and Public Expenditures. With the technical aid of Public Administration Service, the Commission has launched studies intended to lead to the reorganization of finance, civil service, public works, public welfare, and other state agencies.

A special session of the Wisconsin legislature authorized Gov. LaFollette to reorganize the state government through rearrangement, consolidation, and abolishment of divisions, boards, and bureaus. Studies are now under way which it is expected will lead to greater simplification of the state organization as well as to greater efficiency in operations. Boards of correction and mental hygiene as well as a new department of commerce were established, and the Governor was also empowered by the legislature to designate the agency to administer the new $3,000,000 relief fund.

PUBLIC PERSONNEL ADMINISTRATION [2]

Unprecedented progress was made by civil service during the year. The adoption of state-wide merit systems by five States was a greater advance on the state level than had been made in the 25 years preceding. Passage of state enabling acts brought about an extension of the list of cities having civil service, while many other cities placed additional employees under existing merit systems. Attention was directed to the Federal Civil Service by the report of the President's Committee on Administrative Management which recommended that the merit system "should be extended upward, outward and downward to include all positions in the executive branch of the government except those which are of a policy-determining character."

A noticeable development in the new laws has been the tendency to relegate the Civil Service Commission or board to advisory functions rather than to grant it administrative duties as some of the existing systems now have. Usually the board has been given the power to appoint or recommend the appointment of the personnel director.

Arkansas adopted the first state civil service law in 1937 when Gov. Bailey on Feb. 3 signed a bill providing for a state merit system. Notable features of the new law are the large proportion of positions placed in the classified service and the freedom from the handicaps of veterans' preference and rigid residence restrictions. Provision is made for the development of a comprehensive personnel program which includes a classification and compensation plan, a scientific recruiting system, employee training and other constructive in-service activities, and a removal procedure which will pro-

[2] Data furnished by G. Lyle Belsley, Executive Director, Civil Service Assembly.

tect competent employees against political favoritism and yet facilitate the separation of unsatisfactory workers. Under the law, the State Civil Service Commission is authorized to perform technical personnel services for counties and cities upon the request of these local governmental units. Following the organization of the Civil Service Commission and the appointment of a Director of Personnel, work was started on the classification of employees in the state departments. The end of the year saw this virtually completed. (For further discussion, see "Federal Civil Service," p. 131–135).

LEGISLATIVE AIDS

Increasingly burdensome problems facing state legislators have been responsible for the unusual attention given to methods of improving the legislative process. Interest in the unicameral legislature in Nebraska was reflected in the introduction of single-house proposals in 23 legislatures during the year, though none received favorable action.

A further attempt to modernize state legislative methods has been made in the creation of "legislative councils." Of the eight States which have established these councils, Connecticut, Illinois, and Nebraska acted in 1937. The legislative council is usually composed of 15 to 25 experienced legislators, aided by a competent research staff. It meets regularly between sessions and considers legislative proposals with the view to securing a directed legislative program.

Legislative reference bureaus, the right arm of the legislature in drafting and research work, were the third legislative aid to receive 1937 impetus. New Mexico, which has hitherto had no such service, established a Legislative Reference Bureau under the model act providing for cooperation with The Council of State Governments. The new Bureau is to carry on a research and reference service and will do bill drafting and statute revision work as well. The Arizona State Library which has carried on a service handicapped by lack of space and funds was given enlarged powers, duties, and facilities in 1937.

NATIONAL AND INTERSTATE RELATIONS OF STATES

By Rodney L. Mott

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TRENDS TOWARD INTERSTATE CO-OPERATION

It was most fitting that the sesquicentennial of the signing of the United States Constitution should have witnessed dramatic and important achievements in the formation of "a more perfect Union." For the first time since the historic day in September, 1787, delegates from more than half of the States met to sign a document pledging interstate cooperation. This signing of the Interstate Parole Compact in Kansas City in September, 1937, was only one of the many steps taken during the year to achieve greater harmony in state action, but it dramatized the fact that the States are becoming increasingly conscious of their mutual interdependence.

A necessary preliminary to effective interstate action is a period of conference in which problems are explored, issues made clear, and governmental officials, as well as the public, informed of the possible solutions. Beginning in January, 1937 and continuing until just before Christmas, there was hardly a fortnight that did not find representatives of a number of States meeting in an effort to find a solution for their common governmental problems. Indeed, the number of these conferences became so large that *State Government* in December began the publication of an "Interstate Calendar" on

which were listed all conferences of this nature. The first calendar named a dozen such meetings for the bi-monthly period from Oct. 25 to Dec. 25.

THIRD INTERSTATE ASSEMBLY

The most significant meeting on interstate relations held during January, 1937 was the Third Interstate Assembly which met in Washington, D. C. Jan. 21-23. Officially designated delegates from 45 of the States heard reports from a series of commissions which had been investigating problems common to the States during the preceding biennium, listened to addresses by prominent state and Federal officials, including Secretary of Agriculture Wallace, promulgated "A Declaration of Interdependence of the Governments within the United States of America," and passed a series of resolutions covering action on such problems as social security, crime, tax revision, and flood control. While the influence of this gathering on subsequent legislation was considerable, its most important effect was undoubtedly in strengthening the demand for concerted action by the States and in informing individuals and the public on the problems involved.

DELAWARE RIVER CONFERENCE

Nearly a year later, a second regional conference of the Interstate Commission on the Delaware River Basin was held in Philadelphia. This conference grew out of the pollution of the Delaware River and the desire of the States to retain control of the water and power rights on that stream. The conference brought together 175 representatives from New Jersey, New York, Pennsylvania, Delaware, Maryland, Illinois, Massachusetts, Vermont, and West Virginia, including delegates from almost every agency in the major governments which in any way were involved with water resources problems. A dozen Federal departments and agencies were also represented. The technical competence of many of the representatives was reflected in the informing discussions which involved, among other things, various Federal proposals for the development of the Delaware River. The resolutions of the conference included opposition to the Federal development of water power, but approval of the establishment of a Federal planning agency for the region. The conference also went on record as favoring Federal-state co-operation in correcting the existing coal culm condition of the Schuylkill River.

ANNUAL GOVERNORS' CONFERENCE

A third conference of especial significance was the 29th Annual Governors' Conference at Atlantic City, Sept. 14-16. With a notable absence of partisanship, the governors devoted almost all of their discussions to Federal-state and interstate relations. Addresses by various governors on conflicting taxation, Federal-state relations in education, flood control, and crime prevention brought out the desirability of more uniform state action as well as sharp protests against increasing Federal encroachment on the prerogatives of the States.

STATE COMMISSIONS

A second prerequisite to effective community action among the States is the creation of organizations to carry forward the projects developed in the conferences. The leading organization of this kind is The Council of State Governments, with headquarters in Chicago and branch offices in New York, Philadelphia, and Washington. Co-operating with the Council are 35 state commissions on interstate co-operation. These continuing commissions have all been established by legislative action and are usually specially created for this purpose. In Massachusetts, however, the Commission on Interstate Compacts Affecting Labor and Industry, which so successfully fathered the New England Minimum Wage Compact, had its work broadened and has become the Massachusetts Commission on Interstate Co-operation. Another interesting exception is Michigan where the Legislative Council has been designated to aid in

co-operation with other States, thus linking together two of the most significant improvements in state government which have been developed during the present decade.

The legislatures meeting in 1937 more than doubled the number of these state commissions on interstate co-operation, thus demonstrating that they were willing to take active steps to implement the idea of mutual state action. The organization thus achieved is exceedingly flexible. On problems of general concern, such as the supervision of paroled prisoners, the entire group of States can co-operate, while on matters of more regional significance, such as the pollution of a river, those States immediately concerned can unite for common action. Three agencies have been established by The Council of State Governments to grapple with nationwide problems: (a) the Interstate Commission on Conflicting Taxation ("Incotax"); (b) the Interstate Commission on Crime ("Incocrime"); and (c) the Interstate Commission on Social Security ("Incosec"). Two regional commissions are now functioning: (a) the Interstate Commission on the Delaware River Basin ("Incodel") and (b) the Interstate Commission on the Ohio Basin ("Incohio"). The last named is the most recently created of these agencies and grew out of a demand on the part of the States for an organization through which they could co-operate with the National Government in the institution and consummation of a long-range program of flood control.

FLOOD CONTROL COMMISSION

The 1937 flood disaster came while the Interstate Assembly was in session, and at once there was a demand that a new commission be established to facilitate interstate and Federal action. Seven of the nine States affected were already members of The Council of State Governments and had established commissions on interstate co-operation. This promoted speedy action and within a month of the time the disaster struck, the new commission was created. All nine of the States concerned are now participating in this organization (Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia). Representatives of several Federal agencies have met with the representatives of the States, and indeed, the articles of organization of the commission provide that the National Resources Committee and the Corps of Engineers of the United States Army shall be requested to send representatives to each meeting.

INTERSTATE ADMINISTRATIVE AGENCIES

A third step in the development of interstate co-operation is the establishment of agencies to administer the policies initiated by the joint action of the States. Several such interstate administrative agencies have been created with conspicuously successful results. During 1937, a new name was added to this list—the Palisades Interstate Park Commission. This body was created by interstate compact of New York and New Jersey to administer a scenic area which contains recreational facilities of importance to both.

Those who have been working in the field of interstate relations have developed three general methods which may be used to harmonize the activities of the States. The first technique is to press the enactment of uniform or similar laws by the various legislative bodies. The pioneer in this field—the National Conference of Commissioners on Uniform State Laws—has gradually broadened the sphere of its activities until now more than 50 laws have been presented for state approval. During 1937, three new proposals were added, including the highly significant Uniform Expert Testimony Act, the Uniform Trusts Act, and the Uniform Criminal Statistics Act. These acts were adopted for submission to the state legislature by the 47th annual conference which met in Kansas City, Mo. Sept. 20-25.

The Expert Testimony Act was drafted, "to eliminate the evils of

bias and partisanship" which are sometimes found in expert testimony in courts. Under it the court would be empowered to summon its own expert witnesses. The Trusts Act relates to such matters as the duties and liabilities of both natural and corporate trustees, as well as the loan of trust funds. The Uniform Criminal Statistics Act is designed to make statistics on the incidence and punishment of crime more readily available and to insure comparability between the data prepared in each State.

INTERSTATE CO-OPERATION ON CRIME

One group of uniform acts which have met with striking approval by the States are those proposed by the Interstate Commission on Crime. Each of the four major acts proposed by that body has been widely adopted. The act to permit officers of one State, on crossing the line into another, to pursue and arrest a fugitive from justice, has been enacted in 23 States. Eighteen States now authorize the waiver of formal interstate rendition proceedings in the State of arrest. In twenty-one States the courts may detain and send into another State a witness who is needed in a criminal prosecution. The act providing for the supervision, by the authorities of one State, of a paroled prisoner who has come from the State where he was convicted, has been enacted by 18 legislatures. The Federal Bureau of Investigation and the Conference of Commissioners on Uniform State Laws, as well as The Council of State Governments, have been active in bringing the necessity for these laws to the attention of the legislatures.

UNIFORMITY IN THE SOCIAL SEURITY PROGRAM

Still more striking as an achievement in uniform state action has been the success of the Federal Government in securing state adoption of various parts of the social security program. Armed with the weapons of rebates on Federal pay-roll taxes, to say nothing of direct Federal subsidies to those States which enact laws meeting the approval of national agencies, an amazing uniformity of state action has been achieved in a very short period of time. Unemployment compensation laws, conformable to the requirements of the Social Security Board, have been enacted by each of the States and in three of the Territories. Forty-four States and Territories have enacted laws for assistance to needy aged persons, blind persons, and dependent children under the joint Federal-state program. Services for maternal and child health have been instituted in 51 jurisdictions, programs for child welfare and programs for aid to crippled children have been instituted in 45 each, and public health services have been extended and developed in 51 States and Territories. In 46 States and Hawaii, services for vocational rehabilitation have been extended by Federal assistance.

STATE RECIPROCITY

A second method by which common state action may be secured is the enactment of reciprocity provisions by the various States. Considerable use was made of this technique during 1937, especially in the field of motor vehicle legislation. Thus a number of States now waive certain provisions in their laws for citizens of other States which reciprocate by waiving similar provisions in favor of citizens of the first State. The rigid, and often conflicting, state regulations concerning bus and truck sizes, weights, and licenses has caused no end of inconvenience to the motor transport industry. Six States (Arizona, California, Idaho, Nevada, Utah, and Washington) enacted laws to ameliorate this situation through reciprocal provisions. Georgia, Indiana, and Maine have broadened their reciprocity laws, while South Carolina and West Virginia have authorized the making of reciprocal agreements with other States on the subject of motor vehicle regulation. Commuters will profit from agreements which have been concluded between Washington, Oregon, Cali-

fornia, and Idaho, providing that a resident of one State who is employed in another need only register his car in his home State.

A combination of the method of uniform statutes and reciprocal agreement has been proposed in connection with problems of transferring dependents from State to State and also in relation to problems of settlement of workers. The Interstate Conference on Transient Laws and Settlement Laws and the Interstate Commission on Social Security have drafted a uniform act covering this matter. The proposed statute would authorize the attorneys general of the States concerned to enter into reciprocal agreements with other States in this matter.

INTERSTATE COMPACTS

A third method for rendering the proposals for uniform state action more effective is the use of the interstate compact. The United States Constitution authorizes the States to enter into agreements with each other, provided they secure the consent of Congress. A long list of compacts on a wide variety of subjects have been concluded. In particular this technique has been found useful in setting up an agency of interstate administration, as was done by the compact establishing the Palisades Interstate Park Commission which was ratified by New York and New Jersey during 1937.

The Interstate Oil Compact, which established a commission to promote the regularization of oil production, would have expired on Sept. 1, but by action of the States its life has been extended two years. The New England States Minimum Wage Compact has now been ratified by Massachusetts, Rhode Island, and New Hampshire. Both of these compacts were approved by Congress during the 1937 session.

Two very important compacts for flood control have been entered into by Massachusetts, Connecticut, New Hampshire, and Vermont. One of these would have established a Connecticut River Valley Flood Control Commission with power to construct flood control reservoirs. The plan was to build eight reservoirs at a cost of $2,700,000 for land and materials. The reservoirs would control between 20 and 25 per cent of the drainage area of the Connecticut River and thus reduce materially the flood hazard in the lower parts of the valley. Most of the reservoirs were to be located in Vermont and New Hampshire, but Massachusetts was to pay 50 per cent of the cost and Connecticut 40 per cent, since they were most in danger from floods.

A second compact created the Merrimac River Valley Flood Control Commission. Massachusetts and New Hampshire were to contribute equally toward the operation of this project, the cost of which would be born largely from Federal funds, it was hoped. Both of these compacts were before Congress for ratification during the 1937 session, but in each case opposition arose from Federal administrative departments. As a result they were not ratified, and pending further Congressional action, the projects have necessarily been held in abeyance.

STATE CONSTITUTIONS, REFERENDA AND INITIATIVES

By Walter Sandelius

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STATISTICAL SUMMARY

As compared wtih immediately preceding years the electorates in 1937 gave the impression of a certain return to "normalcy," or of a lessening of restiveness. Whether or not it be taken to reflect some upward trend in the economic condition of the community, even for an odd year when elections are not as a rule

being held, the number of constitutional and statutory measures proposed and referred to the electorates was not large. Only seven States were concerned at all. Only 52 measures were voted upon, and some of these, though submitted to state-wide vote, were of significance only to particular localities within the State. From the total number, 49 were aimed to amend the state constitutions, while three were statutory propositions. Of the constitutional amendments referred, 36 were approved while 13 were rejected by popular vote. Of the three statutory referenda one was approved and two were rejected. Thus, a total of 37 enactments by popular vote became effective during the year.

A somewhat unusual circumstance was that all of the measures voted upon had been referred through legislative action, none upon initiative petitions. Special elections were held in four States, and in these appeared 36 of the proposed constitutional amendments and two of the statutory proposals, while 13 proposals of constitutional amendment and one statutory measure were included upon the general election ballots of three States. Of the amendments submitted in special election, 31 were approved, five rejected; of those submitted in general election, five were approved, eight rejected. The two statutory measures proposed for special election failed of acceptance; the sole statutory measure upon the general election ballot was approved.

SUMMARY BY STATES

Georgia.—The most extensive program of popular legislation for the year appeared in Georgia where 26 constitutional amendments were proposed, all approved by the electorate. Some of these, as will be seen, were significant enough. Yet the whole battery of constitutional measures commanded, definitely, less of public interest than did the single statutory proposal to legalize alcoholic beverages. Significantly or not, this, the only measure to stir much interest, was defeated.

New York, with six amendments proposed, four approved and two rejected, ranks second in the numerical analysis of measures referred. Incidental mention may be made that delegates were elected in this State to a constitutional convention, scheduled for April 1938, intended to draw for the State a revised constitution in which, it is anticipated, will be included a reorganization of fiscal methods and policy, revision of legislative powers and of various regulations concerning home rule of local government units, creation of a state department of justice, etc. The last convention was 22 years ago.

New Mexico, Texas, Pennsylvania.—In each of three States were proposed five constitutional amendments. New Mexico, in special election, rejected all five. Texas, in a special election that attracted less than 14 per cent of the eligible voters, approved the five proposed by the legislature of that State. Pennsylvania, pending court action on a restraining injunction, voted upon five amendments which, as constitutionally required, had been approved by two successive sessions of the legislature. Of these, four were rejected, the alleged cause of the rejection being Republican annoyance at any attempt of Democratic Governor Earle to "tinker" with the constitution.

Kentucky and Maine.—Kentucky, in general election, rejected two constitutional proposals toward governmental revision with content as indicated below. Maine approved the sole proposition on the special election ballot—a statutory measure the nature of which is indicated in due place in the following summaries of content of all measures referred.

GOVERNMENTAL ORGANIZATION AND PROCEDURE

Pennsylvania.—Roughly 26 per cent (13 in number) of the proposed constitutional amendments were intended to effect changes in the structures and procedures of government. In Pennsylvania an interesting contest waged about a proposal to remove the "timelock" pro-

hibiting the submission of proposed constitutional amendments to the electorate more often than once in five years. This measure, sponsored by Governor Earle, met the decisive opposition of Republican leaders throughout the State. In the same State was defeated an amendment to permit the consolidation of city and county governments of Philadelphia into a single unit.

Kentucky.—In Kentucky, similarly, progressive tendencies in government were defeated in the form of two amendments (both rejected), particularly that which would have empowered the legislature to reorganize all governments within the territorial confines of counties, and perhaps also the other which sought to simplify the mode of amending the State's constitution.

Georgia.—Voters in Georgia, however, approved a plan empowering the legislature there to grant to any city or county having a population of more than 1,000 the authority to pass and enforce zoning and planning laws. Georgia also added to the constitution a provision empowering the General Assembly to convene itself in extraordinary session in case of emergency.

New York.—Three New York amendments relate to public officers. Terms of office for governor and lieutenant-governor were lengthened from two to four years, the new constitutional provision stating, moreover, that election to these offices shall not come in the same year as presidential elections. Voters approved also an amendment which lengthens the terms of assemblymen from one to two years, but were given no opportunity to vote upon a proposal that terms of senators should correspondingly be changed from two to four years lest equal terms for senators and representatives should make the two-chamber system unnecessary, political leaders having effectively blocked the latter move with the argument that four years would be too long for senators to be free from exigencies such as arise at the time of election. The third New York amendment allows sheriffs immediately to succeed themselves.

SOCIAL SECURITY

Six of the proposed amendments, all approved, were directed toward the establishment of social security in their respective States. In Pennsylvania the only measure to be approved, among five submitted, was that designed to remove all doubt of the legality of mothers' assistance and of old age pension appropriations. Texas added to the constitution two amendments empowering the legislature to make financial assistance for the needy blind and for destitute children, and to receive from the Federal Government the available financial aid. The first measure, concerning needy blind, provided further that any person receiving such aid must have resided in the State for at least five of the nine years prior to and continuously for one year immediately preceding the time of making application for such aid. In Georgia two approved amendments make provision of assistance to the aged, the needy blind, dependent children, and provide for other welfare benefits. The statutory measure adopted in Maine gives old age assistance, guarantees a minimum educational program, and provides necessary revenues for these purposes.

COURT ORGANIZATION AND PROCEDURE

Five of the amendments were concerned with organization and procedure in the courts. A New York constitutional provision now permits defendants in criminal cases to waive trial by jury, except in the possible penalty of death, the measure here having been approved contrary to the vigorous opposition of some who would anticipate abuses that might strike at the basic right of trial by jury. In New York State was referred also, and rejected, a measure to increase the civil jurisdiction of the City Court, to permit transfer of cases from the Supreme Court to the City Court, and to fix as the minimum the present number of

City Court justices. A third measure designed to established the present Municipal Court of New York City as a constitutional court, with added powers as the legislature might prescribe, similarly was defeated. Georgia added to her constitution a paragraph relating to the disposition of cases in the Supreme Court in which one or more of the justices have been disqualified, and with purpose of preventing delays due to congested dockets. A second amendment, also approved, enlarges the jurisdiction of Courts of Ordinary, Municipal Courts, and Police Courts.

TAXATION

Seven of the proposed constitutional amendments were concerned essentially with matters of taxation, measures included elsewhere in the present analysis being concerned only incidentally with the same subject. The Texas constitution was amended to prevent the assessment of any kind of property for *ad valorem* taxes at greater than fair market value. Added by the same law is the provision to give to taxing districts permission to allow discounts for payment of *ad valorem* taxes when these are paid before the date they would otherwise become delinquent. Rejected by voters of Pennsylvania was a measure that would have authorized the legislature to write both a graduated income tax law and a homestead exemption law. In some respects more in line with the progressive trends in taxation than the Pennsylvania vote was the popular approval upon five tax measures of state-wide application in Georgia. These were drawn to exempt homesteads from taxation; exempt from *ad valorem* taxation clothing and personal property to the extent of $300 in value; authorize the classification of property for purposes of taxation together with the adoption of different rates and methods for different classes of property; provide exercise of the power of taxation toward the payment of pensions to widows of Confederate soldiers; provide that counties may tax in order to pay county agricultural and home demonstration agents.

BOND ISSUES

Far otherwise than in the preceding year, only three of the referred measures were proposals to issue bonds. Only the one was approved—a $40,000,000 issue as voted by New York State—the proceeds of which are to be used in the construction of state hospitals, correctional institutions and other state buildings, the purpose, as designed by Governor Lehman, being to complement the general unemployment relief program. In Pennsylvania, following the more conservative trend already indicated for that State, a constitutional amendment to authorize a $42,000,000 issue of bonds for the improvement of state institutions was decisively defeated. New Mexico rejected an amendment that would have authorized the issue and sale of "State Institution Building Bonds."

MISCELLANEOUS MEASURES

Three of the referred measures of state-wide application remain unclassified: a New Mexico amendment, defeated for lack of the necessary two-thirds majority in each county of the State, the object of which was to fix residence qualifications for voters in state elections and to provide for absentee voting; the already mentioned proposal to legalize alcoholic beverages rejected by voters of Georgia; and an amendment, approved by Texas voters, authorizing the legislature to incorporate, supervise and regulate corporate bodies engaged in banking.

It is of some interest to note the legislative detail which electorates may be called upon to consider, even where only a small portion of the voters may have any direct concern. Sixteen of the constitutional amendments, 15 of which were referred in Georgia, though submitted to state-wide vote, were of interest only to particular localities affected. Thus, Texas voted to permit Harris county to construct roads and bridges and to levy the necessary tax upon ap-

proval of resident, property-owning electors. Of the 15 amendments similarly approved in Georgia, four authorized particular cities to adopt zoning laws; four authorized specified cities to increase their bonded indebtedness for municipal purposes; two permitted certain cities to levy taxes and to appropriate for the securing of new industries; one authorized a local levy of a special tax for educational purposes; one authorized a particular county to make temporary laws; one authorized a county to establish and administer water and fire prevention districts; one created a new senatorial district; one authorized the legislature to enact laws enabling a particular county to create a retirement system for county employees. So do the responsible citizens in one end of the State follow the detailed needs of those who reside in the other.

ELECTORAL LEGISLATION

By Louise Overacker

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NOTABLE CHANGES

The outstanding developments in 1937 in legislation affecting elections were the revision and codification of the Pennsylvania law; the passage of a mandatory, state-wide direct primary law in Utah, one of the four States which heretofore has clung to the convention system; and the extension of permanent registration to important urban centers.

REGISTRATION

Permanent registration has been extended to Chicago, Baltimore, Philadelphia, and first-class cities in Missouri. The Philadelphia law is one of a series providing permanent registration for all jurisdictions in Pennsylvania, where formerly such provisions were limited to second and third class cities. Maryland and Montana have tightened the provisions of their registration laws and in the latter State all existing lists have been cancelled to eliminate alleged frauds. Oklahoma has authorized a new permanent, centralized registration for Tulsa county. Less important changes have been made by Alabama, California, Colorado, Maine, New York, South Dakota, and Wisconsin.

NOMINATIONS

The new direct primary law in Utah is mandatory and applies to national, state, and local offices. Any party which polled two per cent of the total vote cast for all representatives in Congress, or which files a petition signed by at least 500 qualified electors, comes within its scope. The second Tuesday in September is fixed as the date of the primary, with a "run off" primary to take care of cases where no candidate receives a majority in the first primary. The primary is open, candidates for the nominations of all parties having their names arranged in party columns upon a "blanket" ballot with perforations between the columns. After marking his ballot the voter detaches the used section and deposits it in the ballot box. A separate box is provided for unused portions of the ballot. Names may be placed upon the ballot by petition or declaration of candidacy and are rotated. State committees and delegates to national conventions are chosen at a state convention held on or before the last Saturday in June. The platform is drafted by a second convention meeting in September.

Amendments to existing laws affect a variety of provisions. Idaho and Michigan have adopted wide-open primaries. In Idaho the blanket ballot is used, while the Michigan law follows the Wisconsin plan. These amendments, with the Utah law mentioned above, indicate a significant trend toward "open" primaries. Once again New York has made a

temporary change in primary date to avoid a Jewish holiday. North Dakota has changed the date of her primary from the last Wednesday to the last Tuesday in June. The new Pennsylvania code requires fees from those filing nomination petitions, prohibits candidates from filing petitions for more than one party, and requires an affidavit from a candidate stating that he is enrolled in the party named in his nominating petition. Indiana has extended the requirement for rotation of names to all cases where there are two or more candidates for the same nomination. The Massachusetts provisions for a pre-primary convention, passed in 1932, were repealed. Action testing the emergency clause of this repeal is now pending in the Supreme Court of Massachusetts. Oklahoma has abandoned the second or "run off" primary; hereafter a plurality vote will be sufficient to nominate. In Wyoming persons nominated by "write in" votes must formally accept such nominations and pay the fees required of other candidates. Arkansas now permits a candidate at a primary, or his representative, to inspect ballots at the time they are counted, and in South Dakota such candidate may contest a primary by action in the circuit court. Minor amendments relating to filing fees, nominating petitions and the withdrawal of candidates have been passed by a number of States.

A number of amendments concern the organization of new parties. California now requires a petition signed by a number of voters equal to ten per cent of the vote for governor at the last preceding general election to form a new party, and in Oregon the number of signatures on such petitions has been placed at five per cent. In Washington new parties will in the future make their nominations at conventions, but candidates so nominated must file declarations of candidacy and pay the fees required of those whose names appear on a primary ballot.

The Pennsylvania code requires independent nominations to be made before the primary and forbids the nomination of a person who has already filed a petition to run as a candidate at a primary. Wisconsin has increased the minimum number of signers required for independent nomination papers. Idaho has clarified certain provisions of its non-partisan judiciary act. South Dakota has extended non-partisan nominations to superintendent of public instruction and county superintendent of schools. In Wisconsin non-partisan primaries have been authorized for town officers in certain counties.

PARTY ORGANIZATION

California, Kansas, Oregon, South Dakota, Texas, Utah, and Vermont have provided for representation of women upon some or all party committees. In Oregon, South Dakota, and Utah state committees must, in the future, have vice chairmen of the opposite sex from the chairmen. In North Dakota the term of office of precinct committeemen has been fixed at two years. Massachusetts now requires the addresses of candidates for delegates to political conventions to be printed after their names on the ballot.

GENERAL ELECTIONS

Kansas no longer requires voters who have not participated in a primary election to declare their party affiliation before voting at the next general election. Maine has extended the right to vote in county, state, and national elections to qualified voters in unorganized territory. The right to vote in school elections in Oregon on questions other than the election of directors and clerks has been limited to taxpayers. Colorado permits a qualified voter who moves within ten days of an election to vote in his old precinct. Montana now requires the rotation of names on general election ballots if two or more persons are candidates for the same office, and in Iowa the requirement has been extended to the municipal court judiciary ballot. A provision in Oregon which affects only candidates for the legislature in districts in which more than one representative or senator is to be elected, requires names of candidates

of one party to be grouped and rotated by groups. California, Indiana, and Maryland have eliminated the names of presidential electors from the general election ballot.

The most important changes made by the new Pennsylvania code are designed to safeguard the casting and counting of ballots. A voter at the time of the election must sign a certificate which is compared with the signature on his registration card; assistance is limited to those who have stated at the time of registration that such aid will be needed; the number of blank ballots distributed to each county is reduced; and changes are made in the duties of officers, the conduct of elections, and the making of returns. Tennessee now permits a blind voter to have any reputable person of his own selection aid him in marking his ballot. In Massachusetts the state committee of a political party may appoint challengers who may be paid by the party. Hereafter, in South Dakota a tie vote for member of the senate or house of representative will be resolved by lot instead of by special election. Minor amendments in other States affect polling hours and the salary, duties and appointment of election officers.

The use of voting machines has been extended to all counties in Texas; in Maryland they are required throughout the city of Baltimore and may be used in Montgomery county; Rhode Island has sanctioned their use in Narragansett; in Tennessee they may be used in primary as well as general elections; and Wisconsin has authorized their experimental use at all elections. Connecticut and Iowa have made minor changes in the laws regulating the use of machines.

ABSENT VOTING

Absent voting privileges have been extended to the blind in Idaho, and to the physically disabled in Maine. Massachusetts has liberalized the provisions governing the casting of such ballots by those whose absence does not take them outside the State. A new law in Oklahoma permits an absent voter to send his ballot to a duly authorized proxy who opens the outer envelope and casts the ballot for him. In Colorado it is made unlawful for any election official to mail anything other than the necessary voting materials with an absentee ballot. Absent voting has been extended to town elections in Massachusetts, to all village elections at which the Australian ballot is used in Minnesota, and to certain counties in North Carolina. Wyoming now requires sworn affidavits from those witnessing absentee ballots. Amendments affecting time and manner of applying for such ballots and the method of counting them have been adopted in Arizona, Iowa, and Vermont.

CORRUPT PRACTICES

Alabama has liberalized the purposes of legitimate expenditure by including the printing of posters, banners, notices and pamphlets, as well as the ordinary canvassing card; and in Wisconsin the law has been amended to permit the distribution of paper-back matches as campaign advertising. In Texas the amounts which may be spent in primary campaigns in counties of 100,000 or more have been increased slightly. Indiana, New York, and West Virginia have forbidden employers to insert in pay envelopes material intended to influence the political opinions of employees. Unimportant changes in corrupt practices acts have been made by Arizona, Indiana, Maine and New Hampshire.

INITIATIVE, REFERENDUM AND RECALL

Minor changes have been made in the regulations affecting the placing of initiative and referendum measures upon the ballot in California and Oregon, and in recall provisions in commission governed cities in South Dakota.

SPECIAL ACTS

The following States have passed acts affecting elections in local units: Arkansas (biennial elections in first and second class cities and qualifications for voting in school elections);

Georgia (party committees in cities of 200,000 or more, repeal of special primary act for Muscogee county, conduct of elections in towns of Warrenton and Waynesboro); Massachusetts (optional proportional and "preferential" voting in cities and towns); Minnesota (primary elections in certain school districts); Nebraska (nomination of municipal officers in cities of 1,000 to 5,000; North Carolina (primary law extended to Catawba county, Watawga county exempted from primary law, election of party committees in Ashe county, nomination of certain candidates in Avery county, and regulation of assistance to voters in Cherokee and Cumberland counties); Oregon (school elections in Portland); and Rhode Island (time of elections in town of Tiverton).

LAW REFORM

By Clinton Rogers Woodruff

Director of Public Welfare, Philadelphia

BAR ADMISSION STANDARDS

Renewed impetus in the drive for higher standards of admission to the Bar is indicated from courts of last resort and legal education committees. With increasing emphasis the Bar is making known the necessity for requirements of general education at least equivalent to the two-year college recommendation of the American Bar Association. Further attention is being given to the necessity for study in an approved school. A remarkable recommendation was that of the special committee in New Jersey, whose report was adopted at the State Bar Association, calling for a college degree before the beginning of law study and, in addition, 12 months' apprenticeship.

Of the rules actually adopted, those promulgated by the Supreme Court of Nebraska on June 5, on the recommendations of Judges Day and Carter, constituted the most notable advance. They provide for two years of pre-legal college education and require that where school study is depended on to qualify for the bar examinations it must be pursued in a "reputable law school" which term the court defined as meaning a school approved by the American Bar Association. Law office study is still permissible in Nebraska but is subject to rigorous restrictions, including intermediate examinations given at least once a year by which the bar examination commission may satisfy itself that the applicant is diligently and in good faith pursuing the study of law.

The minimum period of law study is three years, and where credit for law school work is sought by a student who has not completed the course required for graduation, such credit shall be allowed under the rules, provided the student has acquired 90 per cent of the credit hours necessary for graduation. However, where a student has failed to graduate, he must show at least four months' additional study either in a law school or as a registered office student. The two-year college requirement applies to all persons registering as office students after June 5, 1937, and to all persons applying for admission upon examination after Sept. 1, 1940.

There are now 34 States where substantially all candidates for admission are required to have two years of college education or its equivalent. In some States, as in Nebraska, the effect of these rules is still prospective.

The recommendation of the Arizona Judicial Council, approved by the State Bar at its meeting on April 30, goes a step farther in requiring graduation from a school on the approved list of the American Bar Association as a qualification for taking the bar examinations. This, of course, includes a minimum of two years of pre-legal college education. The

resolution as passed directed the Board of Governors of the State Bar, subject to the approval of the Supreme Court, to adopt a rule putting this measure into effect beginning with the first bar examination to be held in 1940.

California, in raising its standards, has followed the legislative route. A plebiscite held in the autumn of 1936 by the State Bar of California, favored raising the standards of admission to the bar by a vote of 4,312 to 364. The bill by which this was sought to be accomplished became one of the main parts of the current year's legislative program of the Association. An amendment accepted in order to secure the passage of the legislation diluted the strength of the provision requiring two years of college work by providing that an applicant "must have completed, before beginning the study of law, at least two years of college work or have reached the age of twenty-five years."

AMERICAN JUDICATURE SOCIETY

The American Judicature Society held its annual meeting in Washington, May 5. For two years the Society has centered its administrative efforts in a campaign for increased membership to qualify for a grant in aid offered by the Carnegie Corporation. The increase in membership, plus a bequest of $1,000 by Elihu Root, enabled the Society to meet the requirement for the ensuing year, so that it will receive $6,000. Aid for four succeeding years depends upon maintaining an income twice the amount offered by the Carnegie Corporation. The Society's membership has grown from about 500 to 1,500 and the circulation of its *Journal* from 5,000 to 7,500. The assistance given permits of a large increase in circulation and of added editorial support.

The election of officers resulted in retaining Newton D. Baker (since deceased) as president, and the following vice-presidents: Frank E. Atwood, Judge Van Buren Perry, Frank B. Walker and Prof. Silas C. Harris. Oscar C. Hull was elected as successor to Clarence N. Goodwin as chairman of the board, and Secretary Herbert Harley was re-elected. Directors in all States were elected to the number of 100.

The results of a referendum vote of members of the American Judicature Society announced by Secretary Harley showed that the members voted overwhelmingly against the President's proposals with respect to the Supreme Court and the other Federal Courts. The ballot sent to each member contained the following statement:

"Members of the Society are requested to express their opinions on the ballot below and mail it promptly to the Secretary, Law School, Ann Arbor, Mich. At the annual meeting held May 5 the Judiciary bill was considered. Because of limited attendance no opinions were recorded, but the Directors authorized a referendum vote by Members, and events following the meeting have indicated the necessity for this.

"In an open session arranged by the former Chairman, held after the annual meeting, two addresses were made, as reported in the *Journal* for June, both favorable to the President's proposal as to the Supreme Court. The attendant publicity created the impression that the Society might be in favor of this proposal, although the addresses did not represent, or purport to represent, the views of the Members of the Society, but were the views only of the former Chairman and a non-member."

Following is the official vote cast on the various questions submitted:

	No	Yes
Question One—		
(a) With respect to the Supreme Court ..	609	56
(b) With respect to the other Federal Courts	408	130
Question Two—		
As to Assignment of Circuit and District Judges	356	296
Question Three—		
As to creating the office of Proctor	352	325

Question Four—
As to right of intervention by Atty. General 212 392

Question Five—
Right of direct appeal by Attorney General 244 402

AMERICAN LAW INSTITUTE

The fifteenth annual meeting of the American Law Institute was held in Washington during the week of May 3, and brought more than 700 leading judges, lawyers and law teachers. Chief Justice Charles E. Hughes delivered his annual message to the Institute in which he paid warm tribute to the leadership and vision of Elihu Root, to whom the Institute so largely owed its establishment and whose death occurred during the year. In accordance with his custom of previous years, the Chief Justice referred to the work of the Supreme Court, and reported he was happy to say that it was "fully up with its work" and that during the week of May 3, 1937, cases had been argued which were filed as late as April 20.

Of striking significance were the statistics in Dean Goodrich's report concerning the ever increasing judicial use of the *Restatement*. How widely it is being used as authority in trial courts cannot, of course, be exactly determined. But as to appellate courts, up to April 28, 1937, there were 459 citations by the Federal Courts, and 3,023 by the State Courts, making a total of 3,482 court citations; *Law Review* citations numbered 6,956. The total is 10,438.

Restatements in three different fields, Torts, Property and Security, composed of five drafts, were considered and adopted by the members of the Institute at this annual meeting, and in addition, drafts of two model statutes were presented, namely an Airflight Act and a Property Act. The third volume of *Restatement of Torts* was adopted for official publication, to accompany the two previously published and to bring the total number of completed volumes of the *Restatement* to 13.

AMERICAN BAR ASSOCIATION

The sixtieth annual meeting of the American Bar Association, the first to be convened under the new structure of the Association, made a record of constructive accomplishment. It was held in Kansas City, Mo., Sept. 26–Oct. 1. The criticism sometimes heard as to earlier meetings that the Association merely brought lawyers together, carried out an agreeable social program, provided a platform for a few outstanding addresses and produced only the passage of a few general resolutions soon forgotten, could not be made as to the earnest gathering of lawyers who constituted the House of Delegates and thronged the Assembly and Section meetings to transact the Association's business and to see to it that its decisions were advanced along practicable lines. The meeting was a natural but gratifying development from the Boston sessions in 1936, and the mid-winter meeting of the House of Delegates in January, 1937. The total attendance registered was larger than in Boston, but was affected by the lateness of the time of meeting. Every State was well represented in the House of Delegates as well as in the general attendance, but an unusually large part of the registration came from the region in which the meeting was held.

CONFERENCE ON COMPARATIVE LAW

The 1937 Conference on Comparative Law was held at The Hague, Aug. 4–10. Thirty-five nations were represented by 240 delegates—47 came from the United States, 29 from Great Britain, 31 from France, 29 from Germany, 14 from Italy, 23 from the Netherlands, the remainder being scattered among South Africa, Algeria, Austria, Belgium, Brazil, Canada, China, Cuba, Denmark, Egypt, Finland, Greece, Guatemala, Hungary, India, Iran (Persia), Irish Free State, Japan, Latvia, Luxembourg, Norway, Poland, Rumania, Sweden, Switzerland, Syria, Spain, Czechoslovakia, Turkey and Yugoslavia. The only European country not represented was Russia. In this repre-

sentative character of the delegates, in the practical purport of the topics discussed, and in the active discussion of those topics by well qualified participants, this Congress was far superior to the first held in 1932. The list of judges, lawyers and professors whose reports on the various topics were on file, represented a varied and cosmopolitan aggregation of juristic talent such as has never before been assembled.

The president of the Congress was the eminent Cuban jurist, A. S. de Bustamante, a judge of the World Court. The Secretary was Elemer Balogh, secretary-general of the International Academy of Comparative Law which sponsored the Congress. There was a host of professors of law, and deans of faculties came from Cairo, Cracow, London, Paris, and Rome. Germany was represented by seven universities, Great Britain by six; France by five; Italy by five; Poland by five; Switzerland by four; Japan by three, and United States by 11. Mingled with these judges and professors was an even larger number of practitioners each armed with his specialty. One of the ablest debaters was a Persian lawyer. And one of the most interesting personages was El Sheikh Abdurrahman Hassan, from Cairo, in his Oriental dress, a venerable and shrewd expounder of the Islamic law, who spoke in Arabic through an interpreter.

COUNTY AND RURAL GOVERNMENT

By Orren C. Hormell

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Trends in county and rural government which have increasingly demanded public attention for several years (see The American Year Book, 1934, p. 127; 1935, p. 152; 1936, p. 177) continued unabated during the year 1937. The significant trends may be indicated under the following headings of this review.

STATE CONTROL OR SUPERVISION OF COUNTY AND RURAL GOVERNMENT UNITS

The so-called "Indiana Plan" of state review of local budgets was adopted for Iowa by a legislative act at the 1937 session. The state board of appeal consists of the state comptroller, auditor, and treasurer. Hearings are initiated by an appeal filed by one-fourth of one per cent of the voters in the taxing district. The appeal board may approve, reduce, but not increase, the budget.

The legislature of Maine, by Chapter 233 of the Public Laws of 1937, made effective and available the Maine Municipal Finance Board, set up by Chapter 284 of the Public Laws, Special Session, 1933. The Board, composed of the state tax assessor (chairman), treasurer and auditor, is authorized to take control of any city, town or plantation which "becomes one year and six months in arrears in the payment of its taxes to the State, in full or in part, or defaults on any bond issue or payment of interest due thereon, or refuses or neglects to pay school or other salaries, provided that such unit of government "has also received, from the state, funds in support of the poor." The Board at its discretion may take over the financial affairs of such unit of government and place the management in the hands of a commission or commissioner responsible to the Board alone. By Dec. 1, 1937 three units of local government (two towns and one plantation) had been placed under such a commission by the Board.

Seven Maine towns and plantations were disorganized by the Maine Legislature at the 1937 session. Some towns were reorganized in the simpler form of plantations, while others reverted to the status of "wild lands" or unorganized townships.

State control of town, plantation, and village finance in Maine was

greatly strengthened by a legislative act (Maine Public Laws 1937, Chapter 216) which made mandatory annual audits either by the state department of audit or by qualified public accountants approved by the state auditor. Accounting systems used by towns, plantations, and villages must meet the requirements and approval of the state department of audit.

LOCAL HOME RULE

(See THE AMERICAN YEAR BOOK, 1936, p. 178.) The outstanding legislation for 1937 in the field of Local Home Rule is found in the two comprehensive county home rule acts passed by the New York legislature. The first of the two acts contained the Buckley-Reoux bill prepared by the Mastic Commission. Five basic forms of county government are set up: county manager plan, county president plan, council manager plan, council president plan and the selective plan. Details of the act and its several options are given in the *National Municipal Review,* March, 1937.

The second act to receive passage was sponsored by Senator Desmond and Assemblyman Mailler. The important options contained only in the second act relate to proportional representation for county boards, preferential voting for single elective county officials, non-partisan ballots and transfer of local police functions to the county or to the State. Both acts provide for adequate systems of auditing, accounting, budgeting, and the abolition of the fee system.

Representatives of villages of the first class in New York State, at a meeting Oct. 7, 1937, adopted a petition to the state constitutional convention (convening in 1938) for a grant of home rule powers for their villages.

CITY-COUNTY CONSOLIDATION

Nation-wide attention has been drawn to the campaign for city-county consolidation in Philadelphia. Following an unanimous decision of the Pennsylvania Supreme Court June 25, 1937, a constitutional amendment was submitted to the voters of the State at the election on Nov. 2. If the amendment had been adopted it would have made possible not only the setting up of a single city-county government for Philadelphia, but it would have made possible the elimination of a number of elected county officials and the assumption of their duties by city officials or by appointive agents. The constitution of 1873 provided for the election of 13 county officials, among whom are the sheriff, the coroner, the registrar of wills, and the registrar of deeds. A vigorous campaign was carried on under the leadership of Mayor Wilson of Philadelphia. However the proposed constitutional amendment was defeated at the polls by a vote of approximately 100,000.

The city-county consolidation constitutional amendment submitted to the voters of Kentucky by the 1936 session of the Legislature (see THE AMERICAN YEAR BOOK, 1936, p. 177) was overwhelmingly defeated at the polls Nov. 2, 1937. The county political organizations throughout the State conducted a vigorous campaign against the amendment.

COUNTY CONSOLIDATION

The proposed constitutional amendment in Pennsylvania, mentioned below under Reorganization and Reform in County Government, which may be voted on after it has been approved at another legislative session, contains the following significant section on county consolidation: "A new county shall not be created except by the consolidation of two or more existing counties. An existing county may be abolished and its territory annexed to one or more contiguous counties. The general assembly shall by law provide for the consolidation and abolition of counties, but no existing county shall be consolidated with another, and no county shall be abolished without the consent of the electors thereof."

The legislature of Montana in 1937, in pursuance of a constitutional amendment adopted in November, 1936, provided the statutory details for the consolidation of two or more counties by referendum of the people.

Thirty-five per cent of the voters circulating a petition sets in motion the machinery for consolidation, and such consolidation must be approved at an election by a majority vote in each of the counties involved.

REORGANIZATION AND REFORM IN COUNTY GOVERNMENT

Pennsylvania.—The legislature of Pennsylvania passed a resolution for a constitutional amendment in the interests of a more simplified county government. If the resolution is again passed at the next session of the legislature it will be submitted to a referendum of the people. The proposed amendment reduces the number of elected officials from at least thirteen, to the three commissioners, the sheriff, the district attorney, and the controller. Another section of the proposed amendment provides for the consolidation of counties. (See "County Consolidation.")

New York.—A 12-year campaign for charter improvement was finally brought to a victorious end by the adoption, on Nov. 2 by the voters of Westchester County, of a charter which had been approved by the New York legislature, Chapter 617, Laws of 1937. The legislative act was drawn up under the provisions of the constitutional amendment of 1935 (see THE AMERICAN YEAR BOOK 1936, p. 178). The act was approved by a majority of more than 19,000 votes. The large majority in favor of the new charter polled in White Plains, New Rochelle, and Mt. Vernon offsets the opposition majority in a number of northern towns. The new charter became effective Jan. 1, 1938. However, the county executive who holds the key position under the new charter, will not be elected until November, 1938, and will not take office until Jan. 1, 1939.

The more noteworthy provisions of the charter are: the administrative duties hitherto exercised by the board of supervisors are centralized in the hands of the county executive; the county executive appoints a commissioner of finance, a commissioner of public works, a budget director, a commissioner of public welfare, and a commissioner of health; the appointment of all but the last named officer is subject to the ratification of the board of supervisors; the commissioner of health is appointed subject to the ratification of the county board of health.

Attention should again be called (see THE AMERICAN YEAR BOOK, 1936, p. 178) to the Nassau County charter which was approved by the voters Nov. 3, 1936, under which the first election was held Nov. 2, 1937, and which went into effect Jan. 1, 1938. The charter provides for an elected executive with large administrative and appointive powers.

The voters of Erie County and of Schenectady County, New York, defeated county manager charters submitted to them at the Nov. 2, 1937 election, under the provisions of the so-called Buckley-Reoux Act (Chapter 863, Laws of New York 1937). In both charters the salient feature was a county manager, with administrative duties, appointed by the board of supervisors.

Virginia.—Excellent reports continue to come from the executive and manager plan counties of Virginia (see THE AMERICAN YEAR BOOK, 1936, p. 179). However, the movement to extend the reform to Chesterfield County was defeated in a referendum held Nov. 2. The electors of Henrico County, in a referendum held June 29, voted 2,886 to 2,263 to retain the manager form of government. (See THE AMERICAN YEAR BOOK, 1936, p. 179.)

Tennessee.—A decision of the State Supreme Court, May 8, 1937, supported county reform by upholding the creation, by legislative enactment for Knox County, of a small county commission with power to adopt the county budget. The act makes mandatory the levying of sufficient taxes by the county quarterly court to meet the budgetary provisions of the commission.

California.—The County Development Association of San Diego County is sponsoring a movement for the adoption for that county of the county manager plan. The principle

of appointive executives and department heads received a set-back in San Mateo County when on June 29 the electors voted to amend the county charter by placing the appointive officers of county manager, treasurer, tax collector, recorder, and engineer on the elective list. Before the change can go into effect it must be ratified by the legislature of the State.

Nebraska.—The legislature enacted a new and more effective accounting and audit law for Nebraska counties. The enactment provides for a system of uniform accounts, regular audit (at intervals of not more than two years) by the state auditor's department, and the publication of the audit reports. The so-called county budget act of 1937 made mandatory the balancing of the county budget.

Texas.—The local finance act of 1937 requires the balancing of the budget in counties that sell bonds under the act. The Municipal Finance Officers' Association made a valuable contribution to county finances by issuing a bulletin on *County Finance and Accounting Standards,* which sets up standards and recommends procedure on financial organization, budgeting, accounting, financial reports, and post-auditing.

IMPROVEMENTS IN LOCAL GOVERNMENT PERSONNEL

New York.—Better trained personnel for town and county government is the aim of the Town and County Officers Training School, chartered by the New York State Board of Regents in 1936. The declared purpose of the school is to provide courses of training for municipal officials in the service of New York State towns and counties. During the year 1936–37 training schools in four centers were conducted.

Wisconsin.—Legislative enactments were passed for the purpose of strengthening the county personnel administration. The act of 1935 relating to the application of the merit system to county deputy sheriffs was amended so that the establishing of a county civil service commission is made optional with the county board.

Maryland.—Montgomery County during 1937 availed itself of the personal services of the state employment commissioner, for the administration of the county personnel services. It is the first county in the State to make use of the state personnel service under the merit law of 1920.

REGIONAL AND LOCAL PLANNING AND ZONING

Pennsylvania.—The legislature, through an amendment to the county code (Acts 1937, Nos. 434, 435), provides for county and regional planning commissions, county and regional zoning commissions, and boards of adjustment. The legislation permits county commissioners of two or more counties to set up a joint zoning commission.

New York. — The Westchester County charter contains a comprehensive provision for a department of planning. Among the duties of the department is that of preparing and recommending to the County Board a master plan for the physical development of the county.

Tennessee. — The legislature through an enabling act has provided for the zoning of the five northeastern counties of that state (Unicoi, Carter, Washington, Johnson, and Sullivan). The zoning act applies to all territories outside of municipalities and provides for the regulation of the location, size, and height of buildings and of the use of land and structures within the specified areas.

Oregon.—Under the direction and encouragement of the Oregon state planning commission as many as 28 unofficial county planning commissions are reported to be operating in the counties of Oregon.

New Mexico.—The legislature provided for the creation of wind erosion districts (Laws 1937, Chap. 222) and also for soil conservation districts (Laws 1937, Chap. 219).

North Carolina.—In pursuance of the soil conservation district law passed by the legislature in 1937 the Brown Creek Soil Conservation District has been set up in the counties of Anson and Union.

SURVEYS

New Jersey.—Outstanding among the research agencies surveying local government is the Princeton (University) Local Government Survey. Criteria for the solution of the New Jersey local government problems were clearly stated in "Pocket Report Series" Vol. 2, No. 3, July 1, 1937, as follows: "The rules for practical adjustment in New Jersey are simple, effective and timely. This Report shows how they may be evoked: (1) By a steady and systematic reallocation to larger and more effective service areas of those services which are for the most part no longer local — namely, roads, schools, welfare, and health. (2) By rationalization of local areas through the extension and application of devices well known to local government in New Jersey — namely, intermunicipal agreements, special district organizations, consolidations, and annexations. (3) By gearing the authority of each municipality to the particular type of service range which the community needs and can afford to support."

New York.—The Institute of Public Administration in New York City has continued to render valuable service in the field of local government through surveys and reports. A significant contribution will be the materials gathered for the New York State Constitutional Convention, to be held in 1938, on reorganization of local government in submarginal areas and the problem of public utility taxation by local governments.

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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Legislators' Assn., Drexel Avenue and 58th St., Chicago, Ill.

Civil Service Forum, 2 Lafayette Street, New York City.

National Assn. for Constitutional Government, 716 Colorado Bldg., Washington, D.C.

National Civil Service Reform League, 519 Fifth Ave., New York City.

National Municipal League, 309 E. 34th St., New York City.

The Council of State Governments, Drexel Avenue and 58th Street, Chicago, Ill.

DIVISION V

MUNICIPAL GOVERNMENT

NEW YORK CITY AFFAIRS

By Wallace S. Sayre

Assistant Professor, New York University

RE-ELECTION OF MAYOR LA GUARDIA

The outstanding event of 1937 in New York City was the re-election of the La Guardia Fusion Administration. It had become a settled belief during the past half century that Tammany and its allies could not be defeated twice in succession. The November elections, however, revealed a Tammany not only defeated but demoralized. The extent of the Fusion triumph was greater than in 1933, all the seats on the Board of Estimate being captured except the Bronx Borough presidency. The most dramatic, and the most strategic, Fusion victory was that of Thomas E. Dewey as candidate for District Attorney in New York County. The city-wide vote in the mayoralty contest was as follows:

	La Guardia	Mahoney
Manhattan	328,995	237,006
Bronx	272,322	166,805
Brooklyn	494,516	286,647
Queens	213,939	172,973
Richmond	34,858	27,325
Totals	1,344,630	890,756

FIRST PROPORTIONAL REPRESENTATION ELECTION

Of equal future significance was New York City's first election of councilmen under the proportional representation system. The event attracted world-wide interest as the largest P.R. election yet held, and in the city its novelty attracted an unusual number of candidates. Aspirants to the number of 250 filed petitions as candidates, and 230 of these appeared on the ballots in the several boroughs, 99 of them on the Brooklyn ballot. Popular interest was unusual, and the total valid vote cast for councilmen under the new system was 2,013,101, more than 100,000 above the highest vote ever cast for the Board of Aldermen. Advocates of the new method of election point out that the new council represents the boroughs, the parties, and the electorate more equitably and effectively than the aldermanic system ever did, and that the Tammany monopoly on the legislative body of the city is definitely broken. The new council is composed of 26 members, equally divided at present between organization Democrats and the Fusion and insurgent Democratic forces. George H. Hallett, Jr., has analyzed the voting in New York City under P.R. in the following table:

Party	Votes	Members elected
Democratic	787,614	13
American Labor	359,753	5
City Fusion	179,866	3
Republican	144,494	3
Insurgent Dem.	120,509	2
Other Fusion	45,820	0
Communist	41,564	0
Unattached	16,432	0

THE NEW ADMINISTRATIVE CODE

The year 1937 also saw the completion by the Board of Statutory Consolidation of the new administrative code which supplements the

new "short form" charter. This code, embodying not only the ordinances and local laws but also all state laws applying to the government of the city, was approved by the state legislature meeting in special session in December. The year's end also brought the administrative changes provided by the new charter. The City Planning Commission began its work, the two new city-wide departments—Public Works and Housing and Buildings—were organized by merging various old administrative agencies, and the new Department of Finance began its work separate from the office of the Comptroller. (See "City Politics" pp. 186–190).

NEW YORK CITY FINANCES

The Department of Finance again reported continued improvement in the city's financial status in 1937. The city's sales tax produced a banner yield of $48,000,000, while other emergency taxes netted $23,617,247. The following comparative tables show the progress of city revenues:

Tax Levies and Collections

	1935	1936	1937
Total tax collections	$629,155,396.38	$631,441,217.15	$621,214,121.80
Tax levy	469,370,548.00	453,546,218.91	460,246,375.26
Current tax collections	391,657,981.57	398,431,460.12	410,097,790.69
Collections on arrears	93,373,526.36	68,501,220.19	45,174,732.44
State income tax	6,351,778.93	7,493,877.28	10,697,057.62
Bank tax	3,160,635.63	2,679,671.56	4,640,750.12
Excise tax	10,127,032.39	10,490,910.30	11,784,518.86

Outstanding Securities and Uncollected Taxes

	1935	1936	1937
Securities outstanding against taxes	$104,140,500.00	$80,350,000.00	$39,797,000.00
Uncollected taxes	183,392,724.66	166,126,144.00	47,035,080.25

The Department of Purchase completed in 1937 its fourth year with a fully established integrated purchasing system for the city. The reduction of open market and contract orders continued and the use of requirement contracts increased. During the year a new standard stock catalogue was compiled, published and distributed to the departments. The revision of specifications also continued. The General Drug Storehouse on Welfare Island was completely remodelled and modernized, and two other modern storehouses were constructed, permitting the consolidation of five widely scattered supply depots.

PERSONNEL ADMINISTRATION

The Municipal Civil Service Commission during 1937 extended the merit system by completing the transfer of more than 6,000 non-competitive class employees into the competitive class, advancing plans for the transfer of 5,000 others, and began the transfer of some 8,000 skilled employees from the labor class into the competitive class. The commission continued consolidation of titles in its program of widening promotion opportunities and reducing the number of examinations. It also perfected the service rating system established in 1936 and increased the use of objective testing methods. The number of candidates

participating in examinations multiplied during the year, 42,000 entering the examination for clerk in October.

LEGAL

The Corporation Counsel in 1937 reported an unusually successful year. In tort actions against the city, claims of $35,776,354 were settled for $670,315. In tax certiorari proceedings, reductions were held to 1.9 per cent of the assessed valuations. The two outstanding cases of the year were the reduction of the award to the Lucmay Corporation for property at Bergen Beach from $4,105,429 to $585,000, and the successful defense of the legality of Proportional Representation as a method of election for councilmen.

PUBLIC RELIEF

The most important development of 1937 in relief and welfare administration in New York City was the transfer of the Relief Bureau from emergency status to the Welfare Department of the city. This transfer is a recognition of the permanent problem of relief.

At the end of 1937 approximately 1,100,000 persons were receiving direct or work relief in New York City. Of these, 569,995 were receiving direct relief through the 196,550 cases carried on the rolls of the Emergency Relief Bureau; while the remainder were receiving relief through the work relief program of the Federal Government. The expenditures for direct relief totalled $105,987,117, a reduction of approximately $2,500,000 from the 1936 total. During the year the Works Progress Administration of the Federal Government spent $145,669,639 on work relief in New York City.

HEALTH

The Health Department announced at the end of 1937 that four new records had been established, namely, the lowest infant mortality rate, the lowest death rate from typhoid fever, the lowest tuberculosis death rate and the lowest proportion of deaths of mothers in childbirth. All four are the best records ever attained in the history of the city. The Department also developed its campaign against syphilis by the establishment of new clinics, the expansion of Wassermann test facilities, and a program of health education. The close of the year also saw 20 health districts organized, each with a full time health officer in charge. Nine of the centers are housed in new buildings.

The Department of Hospitals reported a record year with 266,892 persons treated and 2,628,253 clinic visits. The outstanding construction project of the year was the Welfare Hospital for Chronic Diseases with 1,600 beds, a model hospital on Welfare Island. Two of the largest nurses' homes in the country were also completed during the year, one at Welfare Hospital, the other at Kings County Hospital. The major administrative development in the Department during the year was the institution of the 8-hour day, adding 2,799 employees and increasing the payroll of the Department by $2,595,000. The increased work of the Department and the adoption of the 8-hour day have led to a 100 per cent increase in the number of nurses since 1934. In that year there were 3,911 nurses in the Department; at the end of 1937 there were 7,844.

HOUSING

The year saw the completion of the first two major public housing projects in New York City—Williamsburg Houses and Harlem River Houses. These two developments were taken over from the Federal Government and are now being managed by the New York City Housing Authority. The first is the largest public housing project in the United States. The second is a 574-apartment development for Negroes.

The Tenement House Department was at the end of the year merged with the new Department of Housing and Buildings. Its final report listed its accomplishments of the past four years: new fire escapes for 125,000 families, fire-retarded halls for 45,000 families, and the reduction of the number of old-law tenements in the city by more than 6,000.

PARKS

New York City's park facilities continued to expand during 1937 under the program of Commissioner Moses. At the end of the year there were 19,694 acres of park, 368 playgrounds, 16 swimming pools, and other recreational facilities, representing a trebling of recreational opportunities since 1934. The opening of new parkways continued, the most notable being the new Riverside Drive. Among the most important tasks of the year was the preparation of Flushing Meadow Park in Queens for the site of the 1939 World's Fair.

TRANSPORTATION

The most critical transit problem in New York City in 1937 was the perennial problem of unification of the city subways. The Seabury-Berle plan was rejected during the year by the Transit Commission. The Commission failed to produce a negotiable proposal of its own, and the result has been the customary stalemate. The city-owned and -operated subway again reported a record passenger year. Construction of the Sixth Avenue link of the system proceeded rapidly during the year and completion is now promised within two years.

DEPARTMENT OF CORRECTION

The Department of Correction completed its organization of the modern city penitentiary on Rikers Island. This prison now has the most advanced medical service in American prisons, and important laboratory experiments in the treatment of venereal diseases are being worked out in co-operation with the U. S. Public Health Service. The Department has also developed during the year a training course for its employees in which 350 are enrolled. Lectures are delivered by prison administration experts drawn from the staff of the Department and from outside. The New Hampton Reformatory has been made an annex of the New York Industrial High School for Boys, and the same courses with the same credits are offered. Plans were also completed during the year for new prisons to replace the ancient city prisons popularly known as the Raymond Street jail in Brooklyn and the Tombs in Manhattan.

PUBLIC SAFETY

The end of 1937 brought a drastic "shake-up" in the Police Department when the Commissioner retired all members of the Department who had reached age 63 and introduced widespread changes among the high-ranking officers. The Department continued its analysis of traffic problems in the congested areas of the city and at the end of the year adopted a policy which banned parking on a dozen crosstown streets in Manhattan. The program of safety education was also continued during the year.

The Fire Department established the three-platoon system during the last several months of 1937. The gradual inauguration of this system will add 4,500 officers and men to the Department by the end of 1938. The Department also reported a decrease of $1,745,363 in annual fire loss. The loss in 1937 was $5,978,267. The per capita loss in 1937 was 80.4 cents as compared with $1.05 in 1936.

CITY POLITICS

By Howard P. Jones

Executive Director, National Municipal League

GENERAL

From the standpoint of actual and potential change in the American municipal scene, the year 1937 must be recorded as most significant. The spirit of reform was abroad throughout the land and manifested itself in startling eruptions which changed the political landscape to a degree that would have been thought impossible

a few years ago. For the first time in a generation, "good government" has become definitely the mode. Bitter depression experience has apparently forced a new public understanding of the importance of sound local government and tangible evidences of this change in public psychology greet us on all sides.

NEW YORK CITY

Perhaps the most significant of all municipal events, however, must be catalogued not under the head of change but of maintenance of *status quo*. In New York City, for the first time in history, a "reform" administration was re-elected after four years in office. Moreover, Mayor Fiorello La Guardia, whose constructive achievements have attracted the attention of students of government everywhere, was re-elected by the greatest majority ever given to a mayor in New York. This is peculiarly interesting and significant when it is realized that 1937 was a year in which, generally speaking, the "ins" were thrown out and the "outs" went in.

It is probable that students of political science a generation hence will look back to view another event in New York City on election day, 1937, as one of the most significant of the year and perhaps of the generation. That was the adoption by New York City of a new charter and the approval of proportional representation as the method by which the voters would elect the members of the newly created City Council.

The new charter itself deserves brief attention here, as it includes important provisions which we may expect to see widely copied in American municipal law during the next few years. Consideration must first be given, however, to proportional representation and its results, because of all the alterations effected by the charter, it will undoubtedly prove to be most fundamental in its ultimate influence on the future of New York City. Furthermore, the adoption by New York City of this new method of election—"new," that is, in being relatively unfamiliar to most Americans—will undoubtedly create such general interest in it as to ensure its spread to other municipalities, as well as consideration of its employment in the selection of legislative bodies in state government and possibly in the Federal Government. Indeed, proportional representation has already been suggested by Judge Samuel Seabury as the proper method for selecting members of the New York State Legislature, which he would change from a bicameral to a unicameral body.

Proportional representation caused much newspaper and magazine comment during the New York City count because of the delay in obtaining the result and the charges of sabotage. But the result was worth all the trials and tribulations. For the first time in New York's municipal history, Tammany emerged without a majority in the local legislative body.

The new Council, elected by the method just described, is made up of twenty-six members, who were chosen in a borough-wide election, each borough electing one councilman for every 75,000 votes cast. Each borough was, however, guaranteed at least one councilman, regardless of the size of the vote. As a result of this method of selecting councilmen, the Council may, of course, vary in size in different years, depending on the number of votes cast. The political make-up of the newly-chosen Council, which took office January 1, 1938, is interesting, for it contains thirteen, or exactly one-half of the total membership, organization or Tammany Democrats, six members of the American Labor Party, three Republicans, two representatives of the City Fusion Party and two independent Democrats.

Under the new charter, the Council is the legislative body and is vested with the entire legislative power of the city. All municipal legislation is by local law, rather than by ordinance, and local laws may be initiated only in the Council. These local laws may be vetoed by the Mayor subject to the power of the Council to pass them over his veto by a two-thirds vote.

The five borough presidents are also chosen by a borough-wide vote, and

they, with the Mayor, the Comptroller and the President of the Council, the only officials elected by a city-wide vote, compose the Board of Estimate. The primary function of this group is to direct the business affairs of the city. As heretofore, the Mayor, the Comptroller and the President of the Council each have three votes, the Borough President of Manhattan and Brooklyn each have two, and the Borough President of the Bronx, Queens and Richmond each have one vote. The Board has no control over legislation except that local laws having to do with certain subjects directly related to the organization and administration of the government and amendments to the charter require its approval. It also passes upon the expense budget as submitted by the Mayor and the capital budget as submitted by the City Planning Commission.

One of the interesting innovations in the new charter is the creation of the office of Deputy to the Mayor, who is appointed by the Mayor and to whom the Mayor may delegate any except his most important functions. This is in recognition of the fact that the Mayor in New York City needs relief from the excessive burden of routine duties.

A second new departure in the charter which has attracted a great deal of attention is the provision for the City Planning Commission. Composed of six members appointed by the Mayor for overlapping terms of eight years plus the Chief Engineer of the Board of Estimate, the commission is concerned with all matters affecting the welfare of the whole city, and is charged with advising and reporting upon all questions affecting the growth of the city, including the expenditure of capital funds, and changes in zoning and in the city's map. In addition to the usual planning commission function of preparing a master plan, the Commission has been given the responsibility for preparing the annual capital budget as well as a program of capital expenditures for six years. Upon approval of the capital budget by the Board of Estimate and adoption by the Council, the capital budget will control capital expenditures during the year, except that ample provision is made for emergencies.

In connection with this long-range planning, one of the charter provisions which has encountered widespread approval is that which requires New York City gradually to go on a pay-as-you-go basis. The new charter proposes that docks, water supply and subway, bridges or tunnels between two or more boroughs and the approaches thereto, and the acquisition of real property, may be financed as they are now, through long-term borrowing. Capital projects estimated to exceed $20,000,000 may be financed by the issue of serial bonds maturing in not more than 30 years, if authorized by a three-fourths vote of the Board of Estimate. Serial bonds may also be issued for terms not exceeding specified maturities for specified purposes, but as to these and all other improvements, it is proposed that the proportion of cost to be financed currently, as compared with that financed by long-term borrowings, shall be increased two per cent each year. Thus, in the first year 98 per cent of these improvements could be financed by serial bonds and two per cent by tax notes. In the second year, the proportions would become 96 and four, and so on. In 50 years, this would achieve the pay-as-you-go objective. (See "New York City Affairs" pp. 183–186.)

From the strictly political point of view, emergence of the new American Labor Party as the group holding the balance of power in New York City politics and primarily responsible for the overwhelming re-election of Mayor La Guardia must be regarded as the outstanding development on the political horizon and of great national interest, presaging the rise of a strong third party in state and national politics.

BUFFALO

Elections throughout New York State confirmed the results in New York City in which the American Labor Party, first created in 1936 in support of President Roosevelt, played

such an important rôle. In Buffalo the American Labor Party, holding the balance of power, was again instrumental in electing as mayor T. F. Holling, a Democrat. At the same time a Republican Council was elected, so that some co-operative agreement will have to be worked out there before any real progress can be made. The Labor Party also supported 13 of the successful candidates for the Assembly, and its endorsement was given to the candidates receiving the largest votes for candidates-at-large to the forthcoming Constitutional Convention.

DETROIT

Contrary to the strong influence exerted by the American Labor Party, in which labor presented a united front, was the showing made by strictly CIO candidates throughout the country. In Detroit this was made particularly clear due to the fact that the election was non-partisan, and the only point at issue was the rivalry between the CIO and the A. F. of L. Nominated by the latter was Richard W. Reading, till then city clerk and chairman of the important non-partisan city election commission, while the CIO supported Patrick O'Brien, who had once been Michigan's attorney-general. The campaign which developed into a conflict of issues as between employers and employees, actually meant the introduction of an industrial issue in the political field. The result was the decisive defeat of O'Brien, who received only 154,000 out of more than 400,000 votes cast, and what is more surprising, the failure by the CIO to elect even one of its candidates to the Council.

BOSTON

In Boston what seems to forecast the end of the political career of James Curley occurred in November. The non-partisan election law under which Boston operates, with no primary to weed out names prior to the election, has usually worked in Curley's favor since it has served hopelessly to divide his opponents. However, in this election, in spite of the fact that Curley was faced with three rivals, Maurice J. Tobin, young member of the Boston School Committee; Nichols, Republican Mayor of the city from 1926 to 1929; and Foley, a Democrat, the former political boss was not able to rally his accustomed support. Tobin was elected with 105,212 votes, to 80,376 for Curley, the other two running far behind. This was the largest plurality received by any candidate in a Boston mayoralty election since 1909.

CLEVELAND AND PITTSBURGH

In Cleveland the independent Republican mayor Harold H. Burton was re-elected, partly due to hostility to the CIO, although municipal issues were probably of greater significance. Similar repudiation of the CIO took place in other industrial centers in Ohio where it had been expected that the labor groups would play an important part in this year's elections. In Pittsburgh the Democratic Mayor Cornelius D. Scully, who was the candidate of the Steel Workers' Organizing Committee, was retained in office by a vote of 122,400 to 92,800 for his opponent, Robert N. Waddell.

TOLEDO

In two record-breaking elections this fall, Toledo, Ohio, voted to keep its outstanding city manager form of government intact. Toledo's present charter is only two years old, but already that city's voters have been forced to defend it from attempted scuttling no less than three times. To bitter attacks on the city manager, on the proportional representation form of voting and on the City Manager League (a non-partisan citizens' organization formed in 1934 to fight for the manager plan), the League replied in the fall with an aggressive campaign based on the administration's record. One of the most potent elements in the last campaign was the active participation of young people who built up a city-wide ward and precinct organization and conducted a house-to-house canvass of voters.

Toledo's present charter, patterned

after that of Cincinnati, was adopted three years ago by a majority of only 5,000. Six months later, even before the new plan had gone into effect, the politicians forced a special repeal election but were defeated by a larger majority—9,000. Last September the foes of manager government brought about another special election in the hope of abolishing the efficient nine-man council, chosen at large by proportional representation, and going back to the old twenty-one-man council chosen by wards. They were beaten again—35,035 to 19,211. Finally on Nov. 2, Toledo elected to the council nine men, seven of whom were endorsed by the City Manager League.

CINCINNATI

Cincinnati, the largest city in the country operating under the manager plan, experienced a change of managers in 1937. On July 1, Clarence A. Dykstra became president of the University of Wisconsin, and Col. Clarence O. Sherrill, Cincinnati's first manager, returned to the city, stating "it is my feeling that good government at Washington and in the states depends more on the spread of good government in the municipalities than on any other factor."

In the election this November three supporters of the present charter were chosen to the Cincinnati council, and three Republicans. The balance of power is in the hands of the seventh member, an independent Democrat. By casting his vote with the Republicans in the council election for mayor, this man was instrumental in bringing about the defeat of Russell Wilson, mayor of Cleveland since 1930, and in electing in his place, James Garfield Stewart, a Republican.

FUNCTIONS AND TYPES OF MUNICIPAL GOVERNMENT

By Clinton Rogers Woodruff

Director of Public Welfare, Philadelphia

MUNICIPAL ADMINISTRATION

The general policy of the Spelman Fund, one of the Rockefeller foundations, was unchanged during the year. The Fund continued the development of its program, aimed at the improvement of the administrative machinery, and methods through which governmental policies are put into execution. The Fund has no concern as to the policies chosen, but is interested in promoting such competence of administration as will insure that the policies adopted may be tested on their merits.

As in prior years, the Fund, during 1937, extended support to certain organizations of governmental units and of public officials interested in facilitating co-operative effort, in making more widely available the results of administrative experience and research, in developing improved standards and methods, and in increasing the technical competence of public personnel. Aid was also given directly to governmental agencies in the development of new types of service and the testing of new administrative devices which promised significant contributions to the art of public administration.

Over the past eight years, a group of organizations working in the field of public administration has come together at Chicago. Two of these are composed of governmental units: Council of State Governments, with which 35 States are now affiliated, and the American Municipal Association, comprising some 40 state leagues of municipalities with a combined membership of approximately 7,000 cities and towns. In addition to the clearance of information upon administrative matters, these jurisdictional organizations are interested chiefly in co-operation of governmental units in joint enterprises,

problems of general administration, the relationship of functional departments to the central administrative core, and the administrative interrelationships between the different levels of government—local, state and Federal. The Council of State Governments serves also as the secretariat of the American Legislators' Association and provides an information service for two groups of state staff officials—the National Association of Attorneys General and the National Association of Secretaries of State.

Certain other organizations in the group are composed of public officials and public agencies. Among them is the International City Managers' Association, which is primarily concerned with general administration in a particular form of municipal government. The administrative staff functions of planning, personnel and finance, which cut across all of the operating functions of government, are represented by the American Society of Planning Officials, by the Civil Service Assembly of the United States and Canada, and by the Municipal Finance Officers' Association of the United States and Canada together with the National Association of Assessing Officers. The operating functions of public works and welfare, which rank high in relative importance, and the newly developing public function of housing are represented by the American Public Works Association, the American Public Welfare Association and the National Association of Housing Officials. These organizations of public officials and agencies, dealing with staff and operating functions, devote attention to the spread of administrative practice which has been tested by experience, the improvement of administrative standards and methods, and the advancement of technical competence in their respective fields.

The Public Administration Clearing House and the Public Administration Service complete the cluster of organizations located at Chicago toward support of which the Fund has made contributions from time to time. The Public Administration Clearing House serves as an agency for clearance among organizations working in the field of public administration at Chicago and elsewhere and for research agencies and educational institutions with similar interests. The Public Administration Service, which is controlled by the other organizations of the group, serves governmental jurisdictions on a fee basis by making surveys of administrative organizations and methods, developing and installing improvements, and publishing significant material.

CHARTER REVISION AND REFORM

Among the outstanding events and developments in the field of charter revision and reform have been the following: severe limitations on municipal borrowing so as to force municipalities gradually to adopt a modified pay-as-you-go policy; provisions making it easier for owners of real property to pay their taxes promptly through two, three, four or more installment payments; establishment of machinery to handle the large amount of property to which municipalities have had to take title because of delinquent taxes; provisions for a stricter municipal control of the development of undeveloped urban areas to reduce over-speculation in real estate; elimination of administrative boards and substitution of departments with single appointive heads; establishment of municipal welfare work as one of the major municipal functions; and simplification of tax foreclosure procedure.

TRAINING FOR PUBLIC SERVICE

Local government is fighting a losing battle with private industry for talented managers of the public business unless apprenticeship opportunities are made available to young college graduates, according to a report issued recently by the International City Managers' Association Committee on Career Service. While over 80 colleges and universities offer courses preparing for the public service, scarcely more than a dozen cities a year give graduates a chance at the

bottom rung of the career ladder. New York City is considering a plan to take on apprentice engineers for a year's intensive practice in city work. Saginaw, Mich. and Austin, Texas have added graduates in public administration to their city hall staffs for the same purpose.

Solution of this paradox, according to the report, lies in part with the administrators already on the job, who must have "a positive attitude of willingness to assume the periodic responsibility of training an apprentice." Discussion of the ways and means by which city managers can meet this responsibility had an important part in the sessions on personnel administration at the conference of the International City Managers' Association (Oct. 18–21) in New Orleans. City Manager Guiton Morgan, of Austin, Texas, who is now training an apprentice, led the discussion.

A nation-wide local government service that is actually developing "real careers," according to the Association's committee, would absorb several hundred apprentices a year. These apprentices would be on strict probation and would not receive permanent appointments until they had proved their ability. The proving process in some cases might extend over several years. In cases of prejudice against taking non-local residents as apprentices, administrators are urged to discharge their responsibilities by making certain that no young persons of exceptional promise in their own community shall lack opportunity to make a career in local government if they desire it.

ORGANIZATION OF MUNICIPAL EMPLOYEES

The American Federation of State, County and Municipal Employees is the result and culmination of thought and effort exerted over a period of years. It is not an organization recently created to serve a present need or a present special interest, but is a development which has come naturally from our expanding American public service. It is a manifestation of the need for a national agency or device through which public employees in state and local service may find expression.

Some of the constituent locals of this Federation were originally chartered by the American Federation of Labor 25 years ago. The original members of these early locals saw in public employment an opportunity for constructive devoted service. On the other hand, they recognized that public employment had potentialities for dissipation of social resources, if not properly administered. They were interested in making the public service a contributor of good to American life.

The attention given by affiliated unions to economic problems has given them stability and continuity without interfering with their interest in the service. The A.F.S.C. and M.E. is a national tying-together of affiliated locals and such unaffiliated organizations as can be induced to join with a program of economic betterment for its members to give it stability, but devoted in the ultimate to development of good administration in state and local government. Arnold S. Zander is President.

John L. Lewis, chairman of the Committee for Industrial Organization, on July 13, 1937, announced the formation of the State, County and Municipal Workers of America, a national union affiliated with the C.I.O. for the purpose of effectively organizing the state, county and municipal employees. Within three weeks, more than 25,000 members enrolled in some 40 local unions of the S.C.M.W. of A. This amazing response from the public employees not only reflects the prestige and authority the C.I.O. has among workers, but, more particularly, the sentiments and wishes of those workers for an organization which would have that perspective and that equipment for which the state, county and municipal employees have long felt the need. Abraham Flexner is the president.

MUNICIPAL DEBT RELIEF

On Aug. 17, 1937 President Roosevelt affixed his signature to the New Municipal Debt Relief Act enacted

by Congress to take the place of the former Federal Municipal Bankruptcy Act which was invalidated by the United States Supreme Court in May, 1936. The new act is more closely related to the subject of bankruptcies than the original act, and specifically lists the types of local districts to which the act applies. It is further provided that if any provision of the act, or the application thereof to anv taxing agency or class of agency, is held invalid, the remainder of the act, or the application of such provision to any other class of taxing agency, shall not be affected. This provision was obviously inserted because of the fact that the decision invalidating the original act was handed down in a case affecting a water improvement district (Ashton V. Cameron County, Texas, Water Improvement District No. 1).

POLICE ADMINISTRATION

In the opinion of many observers the most outstanding development in police administration for the past year was the two-way radio system. The next ranking was the development of a system of identification by latent fingerprints whereby a party may be identified by only one fingerprint instead of all ten. According to one chief of police, when he installed a two-way radio system, he noticed a decided change in the efficiency of his Department. It added to the expense of operations, but it really lifted the Department from about the worst equipped and least efficient department to a rank that any department should feel proud to claim.

FIRE PREVENTION

The NFPA (National Fire Protection Association) was formed 40 years ago as a research organization to cut down the large fire losses in the United States. A non-profit making enterprise, the Association is mainly supported by the contributions of large industrial concerns interested in lowering fire losses. It has nothing to do with fire insurance rates nor is it connected with fire insurance companies. The Association has made an amazing record in materially reducing fire losses in American cities. After having continually surveyed the fire problem in large municipalities, it is now extending its field work into those smaller communities which utilize local volunteer fire departments. One of its accomplishments was inducing the United States Chamber of Commerce to set up fire waste committees in 600 cities.

The United States has enjoyed declining fire losses for the last five years. This is attributed to the natural tendency to conserve and protect values during a period of depression. In the case of arson fires, it was pointed out that the Association's statistics conclusively prove that, when business is good, fire losses from this cause are relatively low, and when business is bad, fire losses immediately increase. It is interesting to note that the Association estimates between 40 and 50 per cent of the country's total fire loss is due to arson, and that it believes more stringent arson laws are needed.

A recent survey of the Association revealed that over 85 per cent of the country's fire apparatus was more than 15 years old. Since the Association considers 15 years the maximum age for any piece of fire apparatus given normal usage, these figures show a nation-wide need for new fire equipment. The depression has also served to focus emphasis on spending more for fire prevention and less for actual fire fighting. The greatest single hope for the ultimate reduction of fire departmental budgets rests on the expansion of fire prevention activities.

One of the reasons why the United States and Canada have annual fire losses running five to ten times greater than most other countries is that the householder and homeowner feel little individual responsibility, and leave the fire problem to insurance companies and fire departments. Two essential fire protection needs inadequate in most cities are being stressed. The first is the vast importance of continually

and completely training firemen in every phase of fire department operation. The second is the need for the development of adequate building codes to cope with the fire hazard and the necessary honest building inspection to go with the enforcement of the code.

FIRE HAZARDS AND PROTECTION

Probably the most important development in fire prevention and protection during the past year was the resumption of normal purchase of fire apparatus by municipalities. Because of the lack of funds during the years of the depression, many cities throughout the United States failed to replace obsolete fire apparatus. There are still many departments having in service pumping apparatus more than 20 years old, but with business recovery and the steady improvement of municipal finances, this condition will undoubtedly be remedied within a short time.

Of great value in the safety campaign are the regulations developed for the installation of air-conditioning systems. Air-conditioning has actually become a new industry during recent years and its spread to dwelling house construction and its more general use by restaurants and small merchants has necessitated such installation requirements as will safeguard the inherent hazards.

There is a marked tendency on the part of municipalities to adopt new building codes in order to recognize new materials and new methods of construction. A survey of building regulations throughout the country has shown some rather startling results, *i.e.*, the large majority of codes have not been materially revised in 15 to 20 years.

Another interesting development in this respect is the work of the American Standards Association in the creation of a building code Correlating Committee and the establishment of a series of sectional committees for the purpose of compiling an American Standard Building Code.

The continuing growth in the use of fuel oil for domestic as well as industrial purposes has led to the establishment of numerous large fuel oil storage plants especially throughout the Eastern States. This condition and the increased consumption of gasoline and the attendant demand for new above-ground storage tanks has brought about an increased demand for ordinances regulating the storage of inflammable liquids.

Of rather outstanding interest, especially in the South and Southwest, is the rapidly increasing use of liquefied petroleum gas for domestic purposes. This results from the absence of city gas plants in most of the smaller communities, and a recognition on the part of the householder and also industries of the advantages and comforts to be derived by the use of gas as a fuel. As the use of this gas involves inherent fire and explosion hazards the National Board of Fire Underwriters has found it necessary to promulgate comprehensive recommendations. These have been adopted as state laws in Texas, and it is probable that before another year goes by they will also be used at least as a basis for state laws in other States.

In other portions of the country the use of liquefied petroleum gases is also increasing rapidly, especially for industrial purposes. The feature of special interest in connection with systems of this type in the South and Southwest is the use of domestic type systems employing underground pressure vessels. In other portions of the country the storage vessels are located above ground.

Fire prevention education is making steady progress in reaching a larger number of both adults and children each year. During Fire Prevention Week, just past, millions of pieces of literature were distributed, considerable advertising space was devoted to the subject, newspapers everywhere and many magazines carried articles and editorials, numerous speeches and radio talks were given, and thousands of buildings of all types were inspected. An important part of this picture is the interest in fire prevention displayed by chambers of commerce. Each year a larger number of them enter fire prevention

contests and others intensify their activities.

FIRE SAFETY PROBLEMS

Probably the greatest incentive during 1937 to improve the fire and life hazard conditions in schools and other places of public assembly throughout the country was the gas explosion in the New London, Tex., Consolidated High School which caused the death of 294 school children and teachers on March 18. This disaster represents the largest single loss of life by fire in recent years. It was not due to the defects of building construction and arrangement which have been responsible for previous school fire tragedies, but to the neglect of proper precautions in the installation of gas piping. Regulations for safeguarding this hazard have long been established and recommended by the National Fire Protection Association. Since March 18 several state legislatures and city councils have taken definite steps to improve their laws on standards of construction and standards for the installation of heating systems, electrical equipment, gas and oil systems and all features affecting the welfare of the public in schools, public buildings, and other buildings where large numbers of people congregate.

The Ohio River flood which occurred late in January and early in February, 1937, presented one of the greatest fire safety problems which had to be solved during the year. The estimated property damage in the flood was $500,000,000 and approximately 1,000,000 persons were made homeless. Fire protection facilities, including water supplies, were seriously impaired and large areas were isolated by flood waters. Special fire hazards resulting from the emergency included the unsuitable use of temporary heating, cooking, and lighting appliances; the spread of escaping inflammable liquids upon the flood waters; and fires due to the use of damaged electrical equipment. As a result of the disastrous effects of the oil fires caused by the flood, a committee composed of representatives of the various interested agencies issued a report and recommended safeguards for inflammable liquids storage tanks in regions subject to floods which should reduce this potential hazard if widely adopted and enforced by legislative bodies.

A spectacular fire and probably the largest single property loss by fire during the year was that which destroyed the German zeppelin *Hindenburg* on May 6 in Lakehurst, N.J., with a loss of 36 lives and $3,750,000 in property. It is believed that this disaster will result in the increased use of non-flammable helium gas in preference to the highly inflammable hydrogen gas in airships.

Because of the tremendous increase in the number of automobile house trailers in the past year a new committee of the National Fire Protection Association was organized to make its contribution to the control of the fire hazard aspects of this new phase of modern civilization. This committee is now preparing a report which should point the way towards the most effective method of safeguarding the fire hazards of trailers and trailer camps; covering the design, equipment, protection, and maintenance of automobile house trailers and the location, arrangement, protection and administration of areas used for trailer parking.

The five-year downward trend of the national fire loss was interrupted in 1936 (the last year for which figures are available) with a 12% increase over the 1935 loss. The 1936 loss was $263,259,746 as estimated by the National Board of Fire Underwriters. Canada's fire loss for 1936 amounted to $21,549,484, sustained in 42,644 fires, as reported by the Dominion Fire Commissioner. This was a 7% decrease in the fire loss and a slight increase in the number of fires reported in 1935. A survey made for the first time by the National Fire Protection Association based on reports from state fire marshals shows that there were approximately 643,000 fires in the United States in 1936.

SCHOOLS FOR FIREMEN

Continued expansion of the establishment of schools of instruction for

firemen was a gratifying development during the year. About 450 schools were attended by approximately 35,000 firemen. These schools afford a splendid opportunity to acquaint the firemen, especially in the smaller communities, with the latest developments in fire prevention and fire fighting. Reports indicate that the greatest reduction in rural fire losses has come in sections where firemen have taken the special courses offered in these state and regional fire schools.

TRAILER TAXES AND FEES

A survey of the trailer regulation ordinances enacted by 53 cities during the last year reveals that only two cities have undertaken to tax trailer citizens. Peoria Heights, Ill. (population about 3,000), collects a direct annual tax of $50 from every trailer. Virginia Beach, Va. (population about 2,000), restricts all trailer locations to authorized camps and demands from such camp operators a license fee of $100 for the first five units or fewer; $25 for every additional five units or fewer.

Of the other cities covered by the survey made by the American Municipal Association, 29 collect no tax whatsoever. Taxes in the other 24 cities, except in Peoria Heights, are levied upon the trailer camp operator in the form of an annual license fee. This fee, for an average camp of 30 units, ranges from $4.80 in Phoenix, Ariz., to $225 in Virginia Beach. Eleven of these cities collect $15 or less and 10 collect from $15 to $50. Pasadena, Calif., collects $165. The annual revenue from 30 units under the Peoria Heights plan would be $1,500.

BILLBOARDS

In 1923 the Massachusetts State Legislature passed laws regulating billboards which are ahead of many of the laws of today in other States. At the same time it set up the outdoor Advertising Division, mainly for the purpose of enforcing the regulations. In the following year it was provided that the State Public Works Commission should formulate such rules as would be reasonable and expedient for the conduct of the advertising industry. Immediately 12 plant owners objected to the Commission's interpretation of the law, and there ensued long-drawn-out litigation that was not completed until 1935. The final decision upheld the rules and regulations of the Public Works Commission as a proper interpretation of the law, but stressed the fact that the law allowed regulation and restriction of this industry, but by no means did it allow prohibition. (See THE AMERICAN YEAR BOOK, 1935.)

A year ago, the Public Works Commission directed the Outdoor Advertising Division to start enforcing the billboard law as quickly as possible. The work entailed a severe hardship on most of the plant owners, who were faced with the realization that a great portion of their advertising plant would have to be eliminated under the strict enforcement of the advertising law. In addition, the Commissioners refused for the present to grant new billboard location, and, as a result, the various companies objected to the severity of the enforcement and appealed to the Public Works Commission to change its attitude. However, the Commissioners for some time had been planning expenditures of millions of dollars over a period of years for the construction and beautification of highways and approaches to highways. An essential part of this program was the proper regulation of billboards. Therefore the advertising companies in Massachusetts were notified that henceforth all billboards would be confined to industrial or business areas.

Of the New England states, Massachusetts ranks first in places of historic interest, and each year a greater number of tourists from all parts of the country frequent its every section. As a gesture of welcome to these incoming tourists, the Massachusetts Public Works Commissioners are making every effort to preserve the State's scenic beauty for their enjoyment. Proof of the determination to enforce the billboard law to the limit was indicated in the summer of 1937 when the drive to clear historic Cape Cod of all billboards and signs was started. Where billboards were not removed,

legal procedure was brought by the Attorney-General's Office.

The Commissioners do not expect to clean up in a short time a situation that has existed for years, but each step they have taken is effective and one that considers not only the present but the future.

NATIONAL MUNICIPAL LEAGUE MEETING

The 43d annual meeting of the National Municipal League was held in Rochester, N.Y. Nov. 18–20 under the presidency of Dr. Harold W. Dodds. As in former years the Proportional Representation League and the Association of Civic Secretaries met at the same time and place, as did the Governmental Research Association Executive Committee. Among the subjects discussed were: Reorganization of County Government, Problems of Metropolitan Areas, Tax Limitation, Housing, Planning and Zoning, and the Problem of Representation in Government.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN CIVIC ASSN., 901 Union Trust Bldg., Washington, D.C.

AMERICAN LEGISLATORS' ASSN., Drexel Avenue and 58th St., Chicago, Ill.

AMERICAN MUNICIPAL ASSN., 850 East 58th St., Chicago, Ill.

AMERICAN SOCIETY OF MUNICIPAL ENGINEERS, 850 East 58th St., Chicago, Ill.

GOVERNMENTAL RESEARCH ASSN., 850 East 58th St., Chicago, Ill.

INTERNATIONAL CITY MANAGERS' ASSN., 850 East 58th St., Chicago, Ill.

MUNICIPAL FINANCE OFFICERS' ASSN., Chicago, Ill.

NATIONAL ASSN. OF CIVIC SECRETARIES, Wm. Penn Hotel, Pittsburgh, Pa.

NATIONAL CIVIC FEDERATION, 570 Lexington Avenue, New York City.

NATIONAL CIVIL SERVICE REFORM LEAGUE, 521 Fifth Ave., New York City.

NATIONAL INSTITUTE OF PUBLIC ADMINISTRATION, 302 E. 35th St., New York City.

NATIONAL MUNICIPAL LEAGUE, 309 E. 34th St., New York City.

UNITED STATES CONFERENCE OF MAYORS, 850 East 58th St., Chicago Ill.

DIVISION VI

TERRITORIES AND SPHERES OF AMERICAN INFLUENCE

ALASKA

By Ernest Gruening

Director, Division of Territories and Island Possessions, Department of the Interior

FOREIGN TRADE

During the fiscal year ended June 30, 1937 commerce between the United States and Alaska increased $20,522,819. The very substantial increase in shipment of merchandise from Alaska to the United States was primarily due to a successful season in the fishing or canned salmon industry during 1936. Shipments of this product aggregated $45,386,512 or an increase of $19,680,724 over the previous year. Shipments of fur skins to the United States also showed an increase of $174,546 over the previous year and aggregated $2,439,013 in value during 1937. Shipments of gold amounted to $15,877,705. This was a decrease of $261,267 as compared with the fiscal year 1936. This slight decrease is believed to be due to a late clean-up and delayed shipments of gold in the spring of 1937. Increased activities prevailed throughout the mining industry in all lines of mineral production. Tourist travel from the United States and foreign countries to Alaska showed an increase, many steamers being booked to capacity for several months in advance. The balance of trade in favor of Alaska was $37,972,955 which was $17,882,823 more than the previous year.

FINANCE

Cash on hand in the Territorial Treasury Dec. 31, 1936 amounted to $408,858.71 as compared with $637,998.36 the year before. The combined resources of territorial and national banks at the close of business June 30, 1936, were approximately as follows: capital, $840,000; surplus and undivided profits, $987,672.46; deposits, $14,774,663.02. For the previous year they were as follows: capital, $840,000; surplus and undivided profits, $925,551; deposits, $13,787,000.

FISHERIES

The total value of the Alaska fishery products in 1936 was $50,455,272, an increase of $19,224,626 from the preceding year. As compared with the figures for the preceding year salmon products showed a gain of 62% in quantity and 70% in value while an increase in all fisherv products amounted to 43% in quantity and about 62% in value. The total number of salmon of all kinds taken was 129,326,203. The number of cases packed was 8,437,603, valued at $44,751,633 as compared with 5,133,122 cases valued at $25,768,136 in 1935. One hundred and seventeen canneries were in operation, as compared with 99 in the previous year, and the number of persons employed increased from 17,529 to 25,221. Twenty-seven herring plants operated in 1936 or five less than in the preceding year. The total value of herring products was $2,075,632 as compared with $2,374,092 in 1935. The persons employed in this industry decreased from 1,339 to 1,111. The whaling industry took 385 whales, the total value of the products being $334,461 as compared with $390,384 in 1935 when 394 whales were taken.

FUR SEALS

The total of fur seal skins taken in the Pribilof Islands operations in 1936 was 52,446, a decrease of 4,850 over the previous year. Of this total 43,522 were from St. Paul Island and 8,924 from St. George Island. The killings were from surplus three-year old male seals. Computation of the number of animals in the Pribilof Islands for fur seal herds as of Aug. 10, 1936, indicated that there were 1,689,743 seals of all ages and classes in the herd, an increase of 138,830 over 1935. These herds have steadily increased since 1910 when there were but 132,000 seals. In the fiscal year 1937 two public auction sales of seal skins from the Pribilof Islands were held by the Fouke Fur Company at St. Louis, Mo,. and 649 Pribilof Islands seal skins were disposed of at special sales. At the sale on Sept. 14, 1936, 19,866 seal skins brought a total gross price of $591,401,75. At the sale on April 19, 1937, 22,278 fur seal skins brought a gross price of $662,950. There were also sold at public auction 1,019 blue and 15 white fox skins taken on the Pribilof Islands. At the September sale 509 blue fox skins were sold for $12,418, an average of $24,40 each, and 15 white fox skins were sold for $15.87 each, a total of $238. At the April sale 510 blue fox skins brought $15,-048.50 an average of $29.58 each. In the 1936–1937 season 97 blue and nine white fox skins were taken on St. Paul Island and 999 blue and 13 white skins on St. George Island.

REINDEER

Estimates place the number of animals above 470,850. They exist under conditions almost identical with cattle conditions in the West before the days of fencing. The policy of not transferring Government-owned reindeer meat to the States to enter into competition with private enterprise has been continued. The Government markets carcasses only in Alaska. As the reindeer industry is established for the welfare of the native Eskimo and is so closely linked with their educational and community life, it has been deemed advisable to return the administration of the reindeer service to the Office of Indian Affairs, which has supervision of the Eskimo and Indian education and welfare in the Territory. This transfer will be made at the end of the current fiscal year. During the past year 3,500 reindeer were driven from Barrow to Barter Island to provide assurance to the natives of that region against periodic famine.

MINERALS

The total value of mineral products in Alaska since 1880, when records were first kept, is $722,222,000. The peak year was 1916 when the value was $50,900,000. Mines in Alaska produced $23,594,000 worth of minerals in 1936 compared with $18,312,000 in 1935. Of the mineral wealth produced in Alaska since records were first kept, gold is responsible for more than $469,114,000, copper for $219,661,400, silver for $12,-793,000, the balance being distributed between coal, tin, lead and other metals including the platinum group. The mines near Kennicott in the Copper River Region, together with smaller mines from whose concentrates copper is recovered as a byproduct, yielded 39,267,000 pounds of copper, valued at $3,720,000 as compared with 15,056,000 valued at $1,249.700 the previous year. The production of all platinum metals produced in 1936 was 5,654 fine ounces, worth $241,900 as compared with 8,685 fine ounces valued at $259,700 in 1935. In the past, tin worth more than $1,000,000 has been produced from Alaska deposits, but for several years the annual output has been small. In 1936, however, revival of mining in the Seward Peninsula area, as well as small productions from the Hot Springs district of the Yukon region, afforded an output equivalent to 226,000 pounds of metallic tin worth $105,000. The Alaska coal mines in 1936 produced 136,600 tons valued at $573,700, as compared with 119,425 tons valued at $501,600 in 1935. In addition 39,449 tons of coal were imported, thus indicating a domestic consumption for the year of about 176,049 tons. The principal producing Alaska coal mines in 1936 were those of the Evans Jones Coal Co., in the Matanuska district,

and the Healy River Coal Corporation, in the Nenana coal field, north of the Alaska Range. Petroleum production was a negligible operation. Considerable quantities are imported each year into Alaska from the States.

RAILROADS

The annual deficit for the railroads of Alaska amounted to $172,065.90 which included a loss of $174,587 incurred in the operation of ocean-going vessels during the period of the maritime strike. The number of rail-line passengers carried amounted to 27,675, a decrease of 15,406 over the previous year. Rail-line freight amounted to 157,717 tons, an increase of 6,707 tons over the previous year. Of the total freight, 94,294 tons consisted of coal.

AVIATION

Commercial aviation in Alaska continued to forge ahead. Thirteen years ago there was one experimental air mail contract to carry mail 300 miles from Fairbanks to McGrath. There are now 101 planes in service as compared with 79 during the preceding year, and plane miles flown during 1936–1937 totaled 2,088,418. The number of passengers carried was 20,422. Mail and freight carried totaled 3,294,621 lbs. These figures are incomplete as all reports are unavoidably detained.

EDUCATION

Public schools in Alaska for the education of white and mixed-blood children consist of schools within the incoroporated cities and school districts and rural schools outside the incorporated cities. Schools are supported largely by appropriations from the territorial treasury augmented by 25% of the Alaska Fund which is derived from a variety of Federal taxes collected in the Territory. This fund nets the schools about $50,000 a year. Schools within the incorporated cities and school districts derive from 20% to 30% of their operating costs from local taxation, the Territory providing the balance, while all funds for the support of rural schools are furnished by the Territory.

The educational question is complicated by the distribution of children in widely separated communities and the inadequacy or total lack of transportation and communication facilities in some regions. The seasonal nature of many occupations and the nomadic life of some of the natives add to these complications. Four-year high schools, accredited by the University of Washington, are maintained in 11 cities, as follows: Anchorage, Cordova, Douglas, Fairbanks, Juneau, Ketchikan, Petersburg, Seward, Sitka, Valdez, and Wrangell. The high schools at Anchorage, Cordova, Douglas, Fairbanks, Juneau, Ketchikan, Nome, Petersburg, Palmer, Seward, Sitka, Skagway, and Wrangell are also accredited by the Northwest Association of Secondary and Higher Schools. Non-accredited high schools are maintained at Haines, Nenana and Craig.

Graduation from a three-year standard normal school or its equivalent is a prerequisite for the Alaska elementary teacher's certificate. High school teachers must be graduates of standard four-year colleges and must have completed a minimum of 15 semester-hours in education. During the past year the annual turnover of teachers has been about 18% of the total number employed. At the fourteenth annual commencement of the University of Alaska, 17 students were awarded diplomas, as follows: two in chemistry, five in business administration, one in agriculture, one in mathematics, four in arts and letters and two in mining engineering. The enrollment of 200 regular students for the academic year compared with 193 enrolled the previous year. In addition to those regularly enrolled there were the following: 36 in Economics; 26 in Mining, 624 in Mining Extension, making a grand total for all students (less 13 names repeated) of 873.

HEALTH

Tuberculosis is the primary cause of death among the Alaskan natives, accounting for more than one-third of all deaths over the last few years. Hospital facilities for the care of this disease are insufficient and an attempt is now being made to secure funds for the construction of needed tuberculosis

hospitals. The National Tuberculosis Association and other welfare organizations are becoming more interested in the situation and it is hoped that the combined efforts of all concerned will result in materially decreasing the incidence of this disease in the future. Through monies received by virtue of the Social Security Act from the Federal Government, the scope of relief measures was greatly expanded during 1937. A Department of Health was set up with the following four divisions—Division of Communicable Disease Control, Division of Public Health Engineering, Division of Maternal and Child Health, and Division of Public Health Laboratories.

HAWAII

By Ernest Gruening

Director, Division of Territories and Island Possessions, Department of the Interior

GOVERNMENT

Of the 21 islands in the Hawaiian archipelago, eight are inhabited. During the greater part of the nineteenth century the islands formed an independent kingdom, but in 1893 the reigning Queen, Liliuokalani, was deposed and a provisional form of government set up. In 1894 a republic was proclaimed. Pursuant to the request of the people of Hawaii, expressed through the Legislature of the Republic, and a resolution of the United States Congress, approved July 7, 1898, the Islands were formally annexed to the United States on Aug. 12, 1898. The Organic Act under which Hawaii is governed was approved April 30, 1900, since which date the Hawaiian Islands have been functioning as a full-fledged territory of the United States.

Executive power is vested in the Governor, who is appointed by the President by and with the advice and consent of the Senate of the United States. The Organic Act provides that in order to be eligible for appointment to the office of Governor of Hawaii, one shall have resided in Hawaii for at least three years next preceding appointment. The Secretary of the Territory, who becomes Acting Governor in the absence from the Territory of the Governor, is also appointed by the President by and with the advice and consent of the Senate. There is a Legislature of two houses, a Senate of 15 members elected for terms of four years, and a House of Representatives of 30 members elected for terms of two years. Hawaii is represented in Congress by a Delegate, elected biennially. He has the right to debate and may be a member of committees of the House of Representatives but has no vote.

AREA AND POPULATION

For administrative purposes the Territory is divided into five counties as follows: City and County of Honolulu, comprising the Island of Oahu (area 589 sq. m., estimated population 1937, 218,797); County of Hawaii, comprising the Island of Hawaii (area, 4,015 sq. m., population 78,489); County of Maui, comprising the Islands of Maui, Lanai, Kahoolawe and all of Molokai except the leper settlement (area 1,188 sq. m., population 60,600); County of Kauai, comprising the Islands of Kauai and Niihau (area 644 sq. m., population 38,295); and Kalawao, administered by the Board of Hospitals and Settlement (area 10 sq. m., population 524); total area 6,455 sq. m., population 396,715. The principal cities are Honolulu, the capital, situated on the Island of Oahu, population 147,450, and Hilo on the Island of Hawaii, 16,015.

COMMERCE

Hawaii's imports and exports during 1936 showed a big increase over the previous year. The value of shipments to the mainland United States from Hawaii was $125,537,355 and to foreign countries $1,639,450. Imports from the

mainland United States amounted to $85,743,998 and from foreign countries $6,718,981; total imports and exports amounting to $219,639,784, an increase over 1935 of more than $35,000,000. The principal items exported to the mainland United States were sugar, raw and refined, $67,975,548; canned pineapples $38,835,794; pineapple juice, $12,616,689; coffee, $427,697; fiber insulating board, $618,965; molasses, $504,026. Total customs receipts for 1936 amounted to $2,963,844, a gain of $1,107,364 over 1935. This large gain is due in part to the shipping strike, he latter part of 1936, when no American vessels entered Hawaiian ports, resulting in heavy imports, particularly of foodstuffs, from foreign countries. Internal revenue receipts for the fiscal year ended June 30, 1937 were the highest since 1922, amounting to $11,633,487, an increase over the previous year of $3,652,787.

PINEAPPLES

Due to large over-production a few years ago, coupled with falling purchasing power on the mainland, the necessity of adapting production to consumption led to the organization of the Pineapple Producers Co-operative Association in 1932. This limitation was effected, although it involved the sacrifice of large sums already invested. Members of the Association put a new marketing agreement into effect in August, 1933, transferring all then existing stocks of canned pineapple to the ownership of the Association. Each member then drew on the Co-operative for goods sold to consumers. Sales were pooled and the proceeds prorated to members on the basis of the contribution of each to the pool. The Association of Hawaiian Pineapple Canners was dissolved and all of its assets turned over to the new Co-operative, including the experiment station maintained on an annual budget of about $200,000. This station has to its credit notable achievements, the greatest to date being the discovery of the cause of wilt which took a heavy toll of the plants, and the development of successful methods of control. The over-production of canned pineapples having been disposed of through voluntary limitation of the crop, the pack in 1933 was increased to 7,815,540 cases, an increase of more than 50% over the pack the year before. Despite this increase, the unsold carry-over at the end of the pack year, May 31, 1934, was well under 1,000,000 cases.

Each subsequent year the Directors of the Association have set the amount to be packed with a view to supplying all that the consumers would use. The pack has increased to an annual production of at least 10,000,000 cases with prices maintained at a uniform level from early in 1934 to June, 1937 when prices were advanced about 5½%. This price level was about 20% lower than the average for the post-war period up to 1930. The rapid increase in popular demand for pineapple juice has led to its production in substantial volume so that several million cases per year are now being marketed in addition to the canned fruit. This development of juice and increased efficiency of production are enabling the producing companies to operate satisfactorily notwithstanding lower prices received and the increased wages being paid to employees.

SUGAR

For 1937 a quota of 1,038,033 tons of sugar was assigned to the Territory of Hawaii by the Secretary of Agriculture in accordance with provisions in the Sugar Act signed by President Roosevelt, Sept. 1, 1937. This represents about 15 per cent of the total sugar estimated by the Secretary as consumed in the United States in 1937, and is approximately the same percentage of the total United States consumption as when Hawaii became a Territory in 1898. In 1936 Hawaii's sugar quota was fixed at 976,000 tons and its production, including that for local consumption, totalled 1,016,371 tons. Hawaii's sugar crop was the major factor in enabling the Territory to purchase from other parts of the United States merchandise valued at $95,075,599.00 during the fiscal year ended June 30, 1937.

Sugar companies in Hawaii employ in the neighborhood of 50,000 people, the great majority of whom received,

during 1936, an average daily income of $1,884 plus free housing, fuel, garden plots and various welfare facilities which include free medical attention and hospitalization for all family members. These perquisites, which have been estimated by governmental agencies as costing the sugar companies $28 per month per employee, occasioned the expenditure during 1936 of approximately $3,000,000, half of which was for new homes.

FINANCES

The Territory of Hawaii closed the fiscal year ended June 30, 1937 with a surplus in the general fund of $1,315,133, and the budget for the biennium 1937-39 was brought into balance. Total receipts in the general fund (raised principally from income and property taxes and other taxes, rental of public lands licenses, and receipts from public service enterprises) amounted to $13,242,666. Expenditures from the general fund amounted to $12,021,679, the principal items of expense being education, $5,759,577; general government, $796,297; protection to person and property, $309,666; conservation of health and sanitation, $925,129; development and conservation of natural resources, $210,827; charities, hospitals and corrections, $929,948. The aggregate outstanding bonded debt on June 30, 1937 was $33,191,000.

Seven banks with 22 branches were in operation on June 30, 1937, with deposits amounting to $103,200,576. Included in this amount is $43,862,590 in 176,833 savings bank accounts. Six trust companies showed resources of $14,662,100. The assessed value of real and personal property on June 30, 1937 was $394,159,873. Ten building and loan associations showed assets of 5,585,935. Nine hundred and thirty-eight corporations, capitalized at $342,813,155, were doing business on June 30, 1937. Their classification and capitalization follows: 91 agricultural, $176,255; 245 financial, $73,518,455; 73 manufacturing, $11,822,300; 176 miscellaneous, $19,860,482; 38 public utilities, $38,303,648; 315 retail and wholesale, $23,051,270.

TOURIST TRADE

The tourist trade, referred to as Hawaii's "third industry," from the standpoint of revenue brought into the Territory, enjoyed a record year in 1936. In addition to 28,046 cabin passengers who spent one day in Honolulu en route to or from the Orient or the Antipodes, 22,199 tourists-visitors who spent at least two days in the islands—came to Hawaii. While the average tourist who visits Hawaii spends most of his time at the beaches, there are numerous other diversions such as golf, tennis, horseback riding, deep-sea fishing, hiking on scenic trails in the hills and even skiing during the winter months on the slopes of Maunakea (elev. 13,825 feet) on the island of Hawaii.

COMMERCIAL AVIATION

On July 12, 1937 the Pan American Airways completed the first 1,000,000 miles of regular scheduled flying over the Pacific. In the accomplishment of this 5,622,124 passenger miles were flown and 276 tons of air freight, exclusive of mail, were carried. The bulk of this was between San Francisco and Honolulu. Daily service between the islands of the Hawaiian group was maintained by the Inter-Island Airways, Ltd. Five amphibian planes of that company flew 332,841 miles and carried 19,192 passengers during the fiscal year ended June 30, 1937.

MOTOR AND RAIL TRAFFIC

There were 56,034 privately owned automobiles on June 30, 1937. This is approximately one to every seven persons in the Territory. Four railroad companies operating on 351 miles of track carried 304,023 passengers and 1,555,457 tons of freight.

PUERTO RICO

By Blanton Winship

Major General, U.S.A.; Governor of Puerto Rico

DESCRIPTION AND AREA

The island of Puerto Rico is the fourth in size and the easternmost of the four larger Antilles. San Juan, its capital, is approximately 1,400 nautical miles from New York City and 963 nautical miles from Key West. The Island is 100 miles long by 35 miles wide and has an area of 3,406 square miles. Its population is about 1,800,000. The climate is exceptionally agreeable, due to the advantageous geographical location and the continual, refreshing trade winds. The average winter temperature is 73 degrees Fahrenheit and the summer average 76 degrees. In the mountains, rising to a height of 4,400 feet, the average temperature is 70 degrees. By contrast Washington, in summer, ranges from 85 to 90 degrees, and higher temperatures (unknown in Puerto Rico) are not uncommon. Puerto Rico is considered the coolest region in the Caribbean tropics. The vernacular language is Spanish, but English is widely spoken and the schools are bilingual.

GOVERNMENT

Puerto Rico has been held by the Supreme Court to be unincorporated territory of the United States, a status differing from that of those territories which have been incorporated into the Union.

Puerto Rico is governed under the Act of Congress of March 2, 1917, known as the Organic Act, and subsequent amendments. Supreme Executive power is vested in the Governor, who is appointed by the President by and with the advice and consent of the Senate of the United States, and holds office at the pleasure of the President. The act provides for seven departments—Justice, Finance, Interior, Education, Agriculture and Commerce, Labor, and Health. The Attorney General, who heads the Department of Justice, and the Commissioner of Education are similarly appointed by the President; the others are appointed by the Governor with the advice and consent of the Insular Senate. The department heads collectively form a council to the Governor known as the Executive Council. The Auditor of Puerto Rico is also appointed by the President.

The Island is represented in the United States by an elected Resident Commissioner, who has a seat in the United States House of Representatives, with the right to debate but not to vote.

Local legislative powers are vested in a Senate and a House of Representatives chosen by the electorate of the Island every four years.

The judiciary system consists of the Supreme Court, the District Court of the United States for Puerto Rico, the district and municipal courts, and justices of the peace. Appeals may be made in certain cases to appropriate higher courts, including the Supreme Court of the United States. The Chief Justice and four Associate Justices of the Supreme Court, the District Judge, District Attorney and Marshal of the District Court for Puerto Rico are appointed by the President. Statutory laws of the United States not locally inapplicable, except as otherwise provided, are in effect in Puerto Rico, except the internal revenue laws.

LEGISLATION

The first regular session of the Fourteenth Legislature elected Nov. 3, 1936, was in session from Feb. 8 to April 15, 1937. The more important measures enacted during this session were a number of acts to enable Puerto Rico to receive the benefits of certain Federal social, educational and road legislation; also acts to provide for co-operation in the development of plans of the

Puerto Rico Reconstruction Administration, the operation of a cement plant in process of construction by that Administration, the promotion of 4–H Clubs in Puerto Rico, in cooperation with the Department of Agriculture of the United States; amendment to the act regulating contracts for agricultural purposes and grinding of cane so as to penalize fraudulent acts in obtaining crop-loans; four acts embodying provisions on birth control; and to establish a Fair Trade Act.

TOURIST PROMOTION

For the purpose of developing the tourist business of the Island and making its resources and attractions known to the people of the mainland, at the last session of the Legislature there was enacted legislation to create the Institute of Tourism and appropriating four-fifths of the proceeds of a special tax estimated to produce around $200,000 a year for tourist promotion and other related activities. Arrangements have been made for high quality and far-reaching publicity and advertising campaigns, and an attractive Puerto Rican tourist office will shortly be opened in Rockefeller Center in New York City.

ECONOMIC CONDITIONS

In many respects, the Island is experiencing a period of great progress and improvement. Commerce is very active. The larger volume of overseas trade and the increased value of shipments, both to and from Puerto Rico, indicate a very remarkable economic progress. Agricultural rehabilitation projects undertaken by the Puerto Rico Reconstruction Administration have provided employment to a large number of agricultural and industrial workers. The development of a greater number of small farms, with diversification of crops, is being carried on by this Administration through projects directed to eliminate the concentration of lands in a few hands, absentee ownership and a one-crop agriculture. Government and private building construction in cities and towns is general. Tax collections are the highest on record, due to the general revival of business, and revenues are more plentiful. The Insular Government has kept within its budget and added to its surplus. The practical elimination of usury by the vigorous enforcement of the usury laws and the bringing in of money for loans through the Federal Land Bank and other Federal agencies has made money available now at reasonably low rates of interest.

COMMERCE

The total overseas trade of Puerto Rico during the fiscal year 1936–37 showed an increase of 16 per cent in exports and 18.3 per cent in imports over the preceding year. Exports amounted to $114,953,827 and imports to $98,875,491, or a total trade of $213,829,318. The excess of exports over imports was $16,078,336, as compared with $15,542,570 for the past year. Puerto Rico exported $112,857,749 to the mainland, representing 98 per cent of the total exports and $2,096,078 or 2 per cent to foreign countries. Of the imports $90,304,030 worth came from the United States and $8,571,461 from foreign countries. The total trade between Puerto Rico and the United States was $203,161,779, or 95 per cent of all trade. During the calendar year 1936 Puerto Rico ranked sixth among all countries buying from the United States. It purchases there more than any other area in North and South America with the exception of Canada. This year it purchased 14 per cent more than Mexico and 28 per cent more than Cuba, while last year it purchased 7 per cent more than Mexico and 16 per cent more than Cuba. With the exception of the United Kingdom, Puerto Rico buys more food from the United States than any foreign country.

FINANCE

The total revenue collections of the Insular Treasury for the year ended June 30, 1937, amounted to $38,455,590, the highest ever recorded for the Island, exceeding also by $4,836,066 revenue collections for the preceding year. Expenditures to-

talled $14,176,889 from the general fund and $21,237,589 from trust funds. The cash balance in the general fund was $2,683,623, as compared with $1,564,714 for the previous year and $788,693 for 1935. The cash balance in the trust funds was $9,876,141, as compared with $7,256,725 on June 30, 1936, and $5,552,810 on June 30, 1935. Outstanding bond obligations on July 1, 1937, amounted to $28,230,000. During the year bonds were issued in the sum of $2,400,000 and bonds redeemed amounted to $1,325,000. Municipal bond indebtedness amounted to $14,996,500, as compared with $15,247,600 for the preceding year, or a reduction of $251,100. Total assessed valuation of all property was $295,893,430, as compared with $294,481,256 for the preceding year and $289,628,594 for 1935. Average rate of property tax was 2.1877 per cent or .0029 per cent below the rate for 1936. Income tax assessments amounted to $4,683,892, as compared with $2,344,582 for the year before; and collections thereon were $3,342,887 as against $2,185,871 for 1936. The number of banks doing business on June 30, 1937, was 13 with 18 branches, deposits aggregating $59,833,399, an increase of $13,629,784 or 29.50 per cent over the preceding year. Cash balances in the general and trust funds aggregated $12,559,764, as compared with $8,821,440 for the preceding year, or an increase of $3,738,324.

REHABILITATION

Two years after its establishment, the Puerto Rico Reconstruction Administration has attained satisfactory results along the lines of its principal projects. Rehabilitation has been carried out in coffee, tobacco and fruit farms, and work and lands provided for a large number of previously unemployed agricultural workers. Housing construction projects are being developed in rural and urban zones, as well as projects for the betterment of the Island's health conditions. Co-operation is also being given by the Administration in the affording of educational facilities. Encampments have been established where men are being trained in practical agriculture, rural sanitation, and improved living conditions.

AGRICULTURE

In general, Puerto Rican agriculture continued its improvement during the year. Exports of sugar cane and molasses amounted to $72,600,680, or 63 per cent of the total. Production of sugar is regulated by quotas assigned by the United States Department of Agriculture according to Federal laws. The Tobacco Institute of Puerto Rico has been created by the Legislature for improving the tobacco industry by scientific investigations. The successful operation of the surplus disposal project, with the help of a Federal subsidy of five cents per pound of raw coffee sold in continental United States, brought about a local increase in the price of coffee from nine cents per pound at the beginning of the crop to the present price of 18 cents per pound. The cotton industry has been definitely reestablished in Puerto Rico with the aid of the Puerto Rico Marketing Association for minor crops. The cultivation of vegetables has been maintained and exportation increased. The assistance received from various Federal agencies, especially the Farm Credit Administration and the Puerto Rico Reconstruction Administration, has been greatly beneficial to rural economy.

PUBLIC WORKS AND COMMUNICATIONS

The entrance channel to San Juan Harbor has now a depth of 38 feet. The turning basin, with a depth of 30 feet, has been enlarged and the bay may be safely visited by the largest ships in the Caribbean trade. The air service of the Pan American Airways, Inc., is steadily improving. A new weekly service between San Juan and Jamaica has been established. The number of automobiles registered for the year ended June 30, 1937, was 20,967, 2,514 more than the preceding year. The Island has more than 2,110 kilometers of hard-surfaced roads. The Federal Govern-

ment has made appropriations for the suppression of railroad crossings, and increasing the mileage of improved roads. Three new generating hydroelectric plants for the Insular Government system were put in operation this year and other rural electrification projects are also under way.

HEALTH

Local health agencies have been extended to the entire territory of the Island. An intensive anti-tuberculosis program has been carried out during the past three years. The general mortality for 1936 showed a slight increase over 1935 due to some local outbreaks of influenza and other diseases which the health authorities rapidly proceeded to control. Four large district hospitals to be operated under the Department of Health are now under construction.

EDUCATION

The newly appointed Commissioner of Education has continued stressing the teaching of English in the schools, the Legislature having provided for an additional 100 continental teachers of English. As regards the organization of the schools, Puerto Rico follows the 8–4 plan. In the rural zone, a differentiation between primary and intermediate schools is being initiated with the organization of the rural second unit. This type of school should develop into a rural junior high school of a vocational character. During the school year 1936–37 there were 1,713 schools: 25 high schools, 249 elementary urban, 1,370 elementary rural, 67 second units, and two trade schools. A total of 246,868 pupils were enrolled, a decrease of 9,484 under the preceding year, due to the elimination of the rehabilitation schools paid for by the Federal Emergency Relief Administration in 1936. The average daily attendance in all schools was 215,701.24. The first four grades comprise 67.37 per cent of the enrollment. The total number of school buildings is 2,093, of which 1,118 are owned by the Government. There are 5,150 teaching positions, of which 4,836 are paid from insular and 170 from municipal funds. There were 578 organized school lunchrooms, 123 urban and 455 rural, serving an average of 31,116 pupils daily. Fifty-one private schools were in operation with an enrollment of 10,862, employing 480 teachers.

The University of Puerto Rico had an enrollment of 4,952, or an increase of 465 over the previous year.

LABOR CONDITIONS

Following the decision of the Supreme Court of the United States on the subject, the old statute of the Puerto Rican Legislature establishing minimum wages for working women has been revived and its application to shop workers maintained. Collective agreements entered into by the Free Federation of Workingmen of Puerto Rico and the Sugar Producers Association and by the Longshoremen Unions and the shipping companies, prevented labor troubles that might have involved some 140,000 workers in the first case and 12,000 in the second. Similar agreements in the tobacco stripping industry have been perfected.

THE PHILIPPINE ISLANDS

By Charles Burnett

Brigadier General, U.S.A.; Chief, Bureau of Insular Affairs, War Department

POLITICAL AND GOVERNMENTAL STATUS

The status of the Philippine Islands is that of an unincorporated territory of the United States. Under the program provided in the Independence Act of 1934 complete independence of the Islands will be established in 1946. The act specifically sets forth the general powers and authority re-

served to the United States during the period of the Philippine Commonwealth government. The public debt may not exceed limits now or hereafter fixed by the Congress of the United States; trade relations with the United States continue to be governed exclusively by Congress; acts of the National Assembly affecting currency, coinage, imports, exports and immigration do not become effective until approved by the President of the United States; foreign affairs remain under the direct supervision and control of the United States; all acts passed by the National Assembly must be reported to the Congress of the United States; decisions of the courts of the Commonwealth government are subject to review by the Supreme Court of the United States; citizens and corporations of the United States enjoy in the Commonwealth of the Philippines all the civil rights of citizens and corporations of the Philippines. The United States reserves the right to maintain military and other reservations in the Islands until independence, and to occupy naval reservations and fueling stations after independence. There is also reserved to the United States the right to intervene under certain conditions set forth in the act. During the period of the Commonwealth government a United States High Commissioner "shall be the representative of the President of the United States in the Philippine Islands."

CITIZENSHIP

Citizens of the Philippine Islands owe allegiance to and are under the protection of the United States but are not citizens thereof. Those who have had honorable service of not less than three years in the United States Navy or Marine Corps or the Naval Auxiliary Service or who were veterans of the World War may become citizens of the United States. For purposes of immigration the Philippine Islands are considered as a separate country, and the number of immigrants that may enter the United States from the Islands for each fiscal year is limited to a quota of 50.

GOVERNMENT ORGANIZATION

The Independence Act greatly broadened the autonomous powers of the Philippine government. The executive power is vested in the President of the Philippines, elected by the Filipino people for a six-year term and ineligible for reelection. He controls all executive branches and has general supervision over local governments. He appoints all senior officers of government and all minor officials not otherwise provided for. The President is commander-in-chief of the armed forces of the Philippines; in emergencies he may suspend the writ of *habeas corpus* or place the Islands under martial law. He has power to grant reprieves and pardons and remit fines and forfeitures, after conviction, for all offenses except in cases of impeachment. There are seven executive departments. The Auditor-General is appointed by the President for a ten-year term and is not eligible for reappointment. The Philippine Resident Commissioner to the United States is appointed by the President of the Philippines.

The legislative power is vested in a unicameral legislature called the National Assembly to meet every year in regular session for not to exceed 100 days. Special sessions are limtied to 30 days. The membership, not to exceed 120 apportioned on basis of population, is elected by popular vote every three years. Close control and supervision over the natural resources of the Islands is given to the Assembly. That body has power to legislate with reference to public lands, timber and mining. Formerly legislation on these subjects required the approval of the President of the United States before becoming effective. Heads of departments may be heard before the Assembly. Veto provisions are similar to those in the United States Constitution, except that the President may veto specific items in appropriation, tariff and revenue bills.

The judicial power is vested in a Supreme Court constituted of seven

members, a Court of Appeals consisting of 11 judges, a Court of Industrial Relations, Courts of First Instance in each of 27 judicial districts, and inferior courts.

UNITED STATES HIGH COMMISSIONER

Frank Murphy, the first United States High Commissioner to the Philippines, resigned effective Dec. 31, 1936. Paul V. McNutt was appointed by the President on Feb. 17, 1937, to succeed Mr. Murphy and arrived in Manila on April 26.

Besides the functions of the High Commissioner outlined in the Independence Act, additional duties vested in his office include the issuance of passports, matters relating to the documentary requirements for aliens desiring to enter the Philippines, the extradition of fugitives from justice, alien deportation matters, and the issuing of licenses for the export and import of arms, ammunition, and implements of war from and into the Philippines.

The retaining wall for the site of Manila for a residence and office building of the High Commissioner, to be available for diplomatic purposes of the United States after independence is established, was completed in December, 1936. The area has been filled in, and construction of the building itself will be begun at an early date. Plans are being made for the early construction of the High Commissioner's summer residence and office at Baguio.

JOINT TRADE CONFERENCE

Upon the suggestion of the Senatorial committee which visited the Philippines in the latter part of 1934, the President of the United States directed the appointment of an Interdepartmental Committee to study United States–Philippine trade relations in order to facilitate the work of the Joint Conference provided for in the Independence Act, and also suggested that the Philippine Government inaugurate similar studies in the Philippine Islands. Special committees of the United States and of the Philippine Interdepartmental Committees rendered preliminary reports in 1936.

In November, 1936, the Philippine National Assembly authorized the President of the Commonwealth of the Philippines to negotiate with the President of the United States for the holding of an economic and trade conference between the United States and the Philippines and appropriated funds to defray the necessary expenses. The Filipino committee, headed by the President of the Philippines, arrived in Washington in February, 1937, and on April 14 there was appointed a Joint Preparatory Committee of American and Philippine experts to study trade relations between the United States and the Philippines and to recommend a program for the adjustment of Philippine national economy to a position independent of preferential trade relations with the United States. This committee held its first meeting on April 19, 1937. It held hearings and completed the first phase of its work in the United States and continued its studies in the Philippine Islands.

LEGISLATION

The date for the opening of the regular sessions of the National Assembly, which was originally fixed for June 16 of each year, was changed to Oct. 16. As a result of legislation in 1935 four new chartered cities were created in 1937—Cebu, Iloilo, Zamboanga and Davao. Two special sessions of the Assembly were held. During the session from Aug. 28 to Sept. 8 six bills were passed, including appropriations for school purposes; the establishment of an office to take charge of sugar allotments, formerly the responsibility of the United States High Commissioner's office; and provision for provincial, city and municipal elections held on Dec. 14, 1937. At the one-day session on Sept. 9 annuities of Constabulary, Education and Health pensioners were restored.

FINANCES

At the end of 1936* the finances of the Commonwealth government were

* Latest complete figures available.

in excellent condition. The public debt was small. The sinking funds for all outstanding indebtedness had been regularly provided for and segregated. The currency reserves were in excess of the legal requirements for the currency in circulation. The cash on hand and on deposit in the United States amounted to $124,110,537.68.

The total income of the central government was $51,751,118.81, an increase of $10,331,478.15 over 1935. The total expenditures for the year amounted to $46,183,096.35, an increase of $8,216,500.08 over the expenditures made in 1935. The total current surplus as of Dec. 31, 1936, was $45,012,853.13, compared with $41,042,639.10 in 1935, an increase of $3,970,214.03. This amount represents the excess of income over expenditures for the fiscal year.

The invested surplus on Dec. 31, 1936, amounted to $74,777,570.73, as compared with $62,921,688.15 for the previous year, an increase of $11,855,882.58.

A net reduction of $1,639,500 in the total outstanding bonded indebtedness of the Philippine Islands was made for the year 1936. On Dec. 31, 1936, the bonded indebtedness of the insular government amounted to $55,684,000, and that of its provinces and municipalities to $9,316,000, or a total of $65,000,000. If from this total there be deducted collateral bonds with a face value of $7,065,000, issued against provincial and municipal bonds, the net amount of outstanding bonds on Dec. 31, 1936, was $57,935,000, of which $20,902,500 were owned by the Philippine government, having been purchased from sinking or other funds. On June 30, 1937, the amount of the outstanding indebtedness was further reduced to $57,419,000. This is well within the limits provided by law, and the prescribed sinking funds are fully maintained for all outstanding bonds.

TRADE

The total external trade of the Philippines with the United States and foreign countries for 1936 amounted to $237,574,227 and showed an increase of $57,804,697, or 32% over 1935. Exports (not including $11,230,193 in gold and silver ore and bullion) were valued at $136,448,052, an increase of 45%, while imports amounting to $101,126,175 were 18% higher.

Approximately 71% of the trade was with the United States. Goods bought from the United States represented 61% of the total incoming merchandise as compared with 64% in 1935. Shipments to the United States amounted to 79% of the total exports from the Philippines. Shipments of sugar in 1936, approximating 45% of the total export trade for the Islands, aggregated 885,621 long tons as compared with the previous year's reduced total of 508,076 long tons. Shipments of coconut products, consisting of copra, coconut oil and desiccated coconut, showed an increase of approximately $6,000,000 over the 1935 value and amounted to nearly one-fourth the value of all exports. In the Manila hemp trade there was a reduction in quantity from 185,227 long tons exported last year to 164,484 long tons in 1936, the value, however, increasing from $11,473,967 to $17,088,599. Tobacco was exported in reduced quantities, and cigar shipments also decreased. Reports on external trade for the six-month period January–June, 1937, following the close of the calendar year, indicated a substantial increase in imports, with exports declining about 3½% as a result of conditions in the sugar market.

EDUCATION

In September, 1936, 1,262,353 children were enrolled in the Philippine public schools and 97,760 in private schools, making a total of 1,360,113. There was a total of 7,938 public schools taught by 28,485 teachers, a greater number than in any of the previous four years. School expenditures amounted to $12,526,997, representing 19.51% of the total annual governmental expenditures. Education is being extended to as many children as resources will permit, but still public school facilities are provided for only 36% of the school population. Enrollment in the pri-

mary grades is much greater than in the higher grades, and about 67% of the children of primary school age are now enrolled. Eighteen hundred teachers took military instruction in various Army training camps during the summer vacation with a view to taking care of the pre-military training activities of the school boys.

GENERAL CONDITIONS

The first report of the United States High Commissioner showed general conditions to be excellent. A marked improvement was shown in commerce and industry. The year 1936 showed material advancement beyond that of any year since 1929. Expansion in production of gold was the outstanding feature of the year. Peace prevailed, with the exception of tribal differences and minor disturbances among Moro outlaws.

Events of popular interest in 1937 were the Thirty-third Eucharistic Congress held in Manila Feb. 3–7, the number of visitors being estimated at between 600,000 and 1,000,000; the opening on April 28, 1937 by Pan American Airways of commercial air service between Manila and Hongkong; and the vote on woman suffrage, the plebiscite on April 30 resulting in 447,681 affirmative votes and 44,307 negative.

THE VIRGIN ISLANDS

By Lawrence W. Cramer

Governor of the Virgin Islands

GOVERNMENT

The islands in this group, of which the largest are St. Croix, St. Thomas and St. John, were purchased by the United States from Denmark in 1917. Until 1931 they were under the jurisdiction of the Navy Department. In that year they were transferred to the Department of the Interior and since then have enjoyed the status of an "Island Possession" within the Division of Territories and Island Possessions in the Department of the Interior. On June 22, 1936, Congress passed an Organic Act for the Virgin Islands, giving a larger amount of self-government to the two Municipal Councils of the Islands and creating a Legislative Assembly for the group. A program of economic rehabilitation, begun under the first civilian Governor, Paul M. Pearson, has been extended and further developed under his successor, the present Governor, Lawrence W. Cramer.

THE VIRGIN ISLANDS COMPANY

Since 1934, the Federal Government has set up funds to purchase and develop approximately 5,000 acres of land, including two sugar factories, a distillery, 10 laborers' villages, shops, garages, and miscellaneous warehouses and buildings. After 2½ years, the reconstruction work of reconditioning these properties is nearing completion, and the contract to repair the Bethlehem Sugar Mill is under way.

The Virgin Islands Company, a corporation organized to manage these properties, has during the past year cultivated about 2,200 acres of sugar cane and is prepared to plant about 900 acres more. During the 1937 grinding season, the company purchased more than $50,000 worth of sugar cane from 700 Federal homesteaders and small growers. Three thousand five hundred tons of sugar were produced and 2,500 tons were sold to United States refineries. Approximately 100,000 gallons of rum were produced in the 1937 crop prior to June 30, and the total rum on hand aging in white oak barrels amounted to approximately 33,000 gallons on that date.

Besides producing rum and raw sugar, the Virgin Islands Company has set up a chicken farm, selling eggs and chickens locally. The company manufactures high proof distillate for the Angostura-Wuppermann

Corporation, St. Thomas, and raises vegetables for the local market.

The Virgin Islands Company program was established to create commerce, furnish employment to approximately 1,000 people, furnish income to the local government in the form of taxes, and improve living conditions in St. Croix through regular employment and better housing facilities.

HOMESTEADING

The homestead program was expanded and prosecuted with vigor so that there have now been purchased a total of 3,639 acres of land on which a total of 380 homestead families have been established. Under an easy amortization plan, homesteaders are acquiring possession of plots of land averaging six acres each with comfortable small houses which have been constructed thereon. In many cases these homesteaders had previously been renters of private land, paying from $5 to $12 per annum per acre in rental. This amount is in excess of that now paid annually under their purchase contracts for homestead plots. Many of the homesteaders were agricultural laborers earning from 30 to 60 cents per day when fortunate enough to secure employment. One hundred and six homestead houses have been built or reconstructed. Sixty additional homesteaders will be accommodated on the land which is now available. The homestead program has proved to be of fundamental importance and is, without doubt, the most economical of all of the rehabilitation projects which have been established in the Virgin Islands. All costs in connection with this program, except administrative costs, are being recovered under purchase contracts. The original purchase price of the land, cost of surveys, cost of road improvements, house construction and cultivation costs are all chargeable to homesteaders who repay them with interest under their 20-year contracts. The community has secured the benefit of the transformation of a dispossessed class of agricultural laborers into a class of small holders who are prospective property owners attached to the soil.

TOURIST AND WINTER RESIDENTS

The program for the development of St. Thomas as a tourist center has been substantially furthered by the construction of the Bluebeard Castle Hotel begun in 1933. The hotel now has accommodations for a total of 72 persons. It has all the facilities of a superior hotel and in addition has eight cottage units which can be rented either as self-contained living units or as hotel rooms. The hotel, during its construction period, has been operated directly by the Government. During this time it has attracted many people and has been a substantial factor in improving the economic development of the Virgin Islands. From January, 1935, through March, 1937, there was a direct income to the hotel from operation of $62,099.84. The expense of operating the hotel was $62,325.53. Steps are being taken at the present time to lease the hotel to a private operator who, it is believed, can substantially increase its business and make it a more important contributory factor in the improvement of the economic situation in St. Thomas.

URBAN HOUSING

Three urban housing projects located in each of the towns of the Virgin Islands were undertaken by the P.W.A. Housing Division in 1935. These projects are now completed. One hundred and twenty-six family units, with a total of 230 rooms, have been constructed. The houses are of unusually sturdy construction which will resist both hurricanes and termites. They provide comfortable, decent and sanitary dwelling units at rentals which are competitive with rentals now charged commercially for overcrowded, barracks-like, one-time slave quarters or other disgraceful hovels. The management of these housing units is now being transferred to the Government of the Virgin Islands which will operate them without additional administrative cost. Applications in excess of the number of units available in St.

Croix have been received, in St. Thomas a smaller number.

EMERGENCY CONSERVATION WORK

The Civilian Conservation Corps has established three camps in the Virgin Islands, one in St. Croix, with an authorized enrollment of 100, and two in St. Thomas, one of which has an authorized enrollment of 100 and the other of 200. The latter is a so-called Senior Camp which accepts enrollees in the age group between 18 and 55. The C.C.C. has undertaken a number of important projects, among them the establishment of recreational fields adjacent to each of the towns of the Virgin Islands, the construction of truck trails, the propagation and planting of large numbers of trees, drainage works, construction of fire trails and other projects. Much benefit has been derived from the disciplined activities of this organization which is of special importance in the Virgin Islands where home training is often lacking and more often inadequate.

ROAD PROGRAM

Substantial improvements have been made to the road systems of the Islands since 1933. In St. Thomas eight miles of the most important roads have been reconstructed as asphalt penetration roads. Seventeen miles of asphalt surface roads have been constructed in St. Croix between the two principal towns. Approximately 50 miles of road in the Virgin Islands have been reconstructed and improved in this period. The improvements made have been on the most important roads serving the agricultural districts of the community but several roads of great scenic beauty have also been improved. The road improvement program is of special importance in making accessible areas which are suitable for development for the winter resident trade and in making accessible beaches and recreational possibilities.

SANITATION AND WATER SUPPLY

Much more important work has been accomplished in improving the sanitation facilities of the Islands. The problems in this field are peculiarly difficult due to the absence of adequate fresh water supplies. Sewage systems were established in each of the three towns of the Virgin Islands during the early years of the Navy Department's administration there. These systems were inadequate and had seriously deteriorated. P.W.A. funds have been made available to improve the salt water supply systems which constitute the basis of a flushing system, and sewer facilities have been renovated and extended. Much additional work is necessary in this connection if the Virgin Islands are to be, as hoped, a center of the American tourist trade. A substantial allotment of new W.P.A. funds has been made to continue this very necessary program. Street drainage and street surfacing work which is closely related to sanitation requirements has been vigorously prosecuted within the limits of available funds.

Substantial improvements have been made to the fresh water storage facilities of the towns. Catchment areas have been renovated and expanded, additional storage cisterns have been constructed on Government property through the expenditure of Federal funds, and on private property through the loan of municipal funds. The fresh water supply problem is still of grave importance and occasionally it constitutes an acute problem during prolonged droughts. A report made by A. F. Johnson, assistant engineer of the U. S. Bureau of Reclamation, detailed to make a survey of the problem in 1936, indicates that the only economic source of fresh water supplies is rainfall and that the construction of additional storage cisterns adequate in size to store the water caught on roofs would substantially solve the problem.

COOPERATIVES

Cooperative enterprise in the Virgin Islands got its start in the spring of 1931 when Governor Paul M. Pearson initiated a Self-help Cooperative to develop a market for the home industries of the islanders,

consisting principally of planting palm, weaving baskets, needle work, fruit preserving and other handicraft. From a very small beginning six years ago, this handicraft cooperative has developed into a thriving enterprise furnishing employment for over 700 persons and doing over $25,000 business annually.

Cooperative activity has expanded into other fields. A Woodworkers' Cooperative has been organized with a well equipped workshop and is making satisfactory progress. A rural Cooperative has also been established with a central depot for the distribution of the fruit, vegetable and poultry products raised by a group of small farmers and homesteaders and this too is making excellent headway.

THE ECONOMIC TREND

The following indices reveal the upward economic trend:

	Fiscal Years				
	1933	1934	1935	1936	1937
Acres in cane cultivation	4,686	4,505	5,385	6,785	7,500
Tons of sugar produced	4,125	4,088.42	1,670.25	3,730	6,574
Gallons of rum produced	———	70,000	245,000	239,033	257,941
Arrivals of ocean-going ships in St. Thomas	469	498	549	647	777
Tonnage	1,849,255	1,938,637	2,668,452	3,017,682	3,084,173
Value of bunker oil and coal imported	$341,182	$338,259	$366,267	$600,776	$574,697
Sale of native products By Virgin Islands Cooperatives	$4,578	$9,330	$23,371	$26,213	$28,590

With the further development of the economic rehabilitation program, it may confidently be expected that the Virgin Islands will be enabled to meet their own expenses. The revenues of the Municipal governments of the Islands have risen from $193,000 odd in 1933 to $357,000 odd, while the Federal Government's contribution towards the budgets of the municipalities has been reduced from $236,000 in 1933 to $130,000 in 1937.

GUAM AND AMERICAN SAMOA

By R. O. Davis

Commander, U.S.N.; Office of Island Governments, Navy Department

GUAM

Historical.—The Island of Guam lies at the southern end of the Marianas group 1,500 miles east from Manila. It was discovered on March 6, 1521 by Magellan while on his voyage around the world, and the group was recorded as the "Ladrones." The name was changed later to "Marianas" in honor of Maria Ana of Austria, Queen of Spain. The first Spanish missionaries landed at Guam on June 15, 1668, and Spanish rule was inaugurated to continue until June 21, 1898, when the island was captured by the *U.S.S. Charleston,* commanded by Capt. Henry Glass U.S.N. At the termination of the War with Spain,

Guam was formally ceded to the United States by the Treaty of Paris.

Government.—The present form of government dates from Dec. 23, 1898, when President McKinley issued an Executive Order placing the Island under the control and jurisdiction of the Navy Department. A naval officer is commissioned by the President as governor and the same officer receives orders from the Secretary of the Navy as Commandant of the Naval Station, Guam, which station includes the entire island. The Island Government, under the Governor, is organized with all the usual governmental departments, headed by naval officers. Civil regulations with the force and effect of law are issued by the governor. There is a Guam Congress, composed of representatives of the people, which assembles periodically. It has no legislative authority, but acts entirely in an advisory capacity. The present Governor of Guam is Capt. Benjamin V. McCandlish, U.S.N. The seat of the island government is Agana.

Population.—On July 1, 1937, the total population of Guam was 22,132 divided as follows: native born 20,662, foreign born 765, naval establishment and families 705. The native born population is steadily increasing. The natives are known as Chamorros and are of Malayan origin with strains of Spanish, Mexican, Chinese, American and Filipino blood. The official language is English but the ancient Chamorro tongue, corrupted by Spanish, English and dialects of the Philippines, is still in general use. Under American jurisdiction the natives are regarded as wards of the United States Government and are classified as citizens of Guam. They have been little affected by the political, economic and industrial problems of the outside world and are protected from exploitation by the paternal form of government. No alien may own land in Guam, and all sales of land must have the approval of the island government.

Agriculture.—Nearly every native family cultivates a small farm which supplies the principal necessities of food, and agriculture presents the best opportunity for achieving a self-supporting populace. The island Government Department of Agriculture, cooperating with the U. S. Department of Agriculture, is engaged in developing new and better crops and in teaching the people modern and scientific farming methods. An experimental farm is maintained for stock breeding and agriculture development; seeds are issued; and irrigation projects are extended. Copra is the principal crop and the one item of export at present, but the production of rice, tobacco and other crops which may be developed is being furthered by the government.

Trade and Commerce.—The copra export for the fiscal year 1937 totalled 5,201,968 pounds valued at $157,052. The balance of trade against Guam for the fiscal year 1937 was $559,040. Very few merchant ships call at Guam. During the fiscal year 135 vessels entered and cleared, including government vessels and aircraft clipper ships of the transpacific service. Imports valued at $774,244 and exports valued at $215,204 were handled. The Pan-American transpacific air service through Guam is an important new connection with the outside world.

Banking.—The Bank of Guam, established by an Executive Order of the Governor in 1915, is the only bank. The capital stock of $25,000 is owned by the Island Government, and the bank is operated for commercial banking as a division of the Treasury Department of that government. During the fiscal year 1937 the bank financed shipments of merchandise imported by the merchants of Guam to the value of $389,363. Gross earnings of the bank for the fiscal year were $28,807, and net earnings were $23,242.

Health and Sanitation.—The general health and sanitation conditions in Guam are very good and there was no disease in epidemic form during the year. There are no civilian physicians or hospitals on the island, and the government hospitals for the people are operated by naval surgeons and nurses and native nurses trained

by the naval personnel, who treat the people without charge. One civilian dentist is maintained by the island government. The entire population is benefited by the sanitary instruction, training of nurses and detection and isolation of infectious diseases. Schools are visited and children are examined physically by a health officer on an average of twice yearly.

Education.—Academic instruction includes the usual grammar school subjects with special emphasis placed on teaching the people the English language. Training in industry and agriculture is considered to be of paramount importance in connection with developing and encouraging the people to a greater degree of economic independence. During the year the total enrollment of the public schools was 4,618. There were 25 academic day schools, one Junior High School, five industrial schools, one Evening Normal School, one private school (primer to 12th grade), and one agricultural school. All teachers in the regular native schools are natives. Five Americans are employed in the Evening Normal School (for natives).

AMERICAN SAMOA

Historical.—The first record of the Samoan Islands is believed to be that made in 1722 by Jacob Roggeveen, in command of a Dutch expedition to Java *via* Cape Horn. That navigator called his discovery the Baumann Islands. In 1768 they were visited by the French circumnavigator, Bougainville, who named them the Navigators Islands, a name generally used until many years after Capt. Charles Wilkes, U.S.N., visiting them in 1839, first called them the Samoan Islands. Native wars and international controversies persisted through the 19th century until, on Dec. 2, 1899, the United States, Great Britain, and Germany signed a treaty by which the Samoan Islands west of longitude 171° W. were allocated to Germany and those east of that line to the United States. On April 17, 1900, the High Chiefs of Tutuila voluntarily ceded the islands of Tutuila and Aunnu to the United States and the islands of the Manua group were ceded by their chiefs on July 16, 1904. By Joint Resolution of Congress approved March 4, 1925 the sovereignty of the United States was extended to Swain's Island 210 miles to the northward of Tutuila, and that island was made a part of American Samoa.

Government.—On Feb. 19, 1900 the present form of government was established. A Presidential Executive Order placed the islands of American Samoa under the jurisdiction of the Secretary of the Navy. They are under the immediate administration of a naval officer who is commissioned by the President as Governor of American Samoa and that officer is also Commandant of the Naval Station, Tutuila. The Island Government is organized with all the usual governmental departments, and in addition there are native district governors and native county and village chiefs who take an important part in administrative affairs. An annual fono, or general meeting, is attended by the Chiefs and delegates of the people, at which meeting the Governor imparts information and receives recommendations and suggestions. The laws of American Samoa are embodied in a codification of the Regulations and Orders for the Government of American Samoa as issued by the Governor. The policy of the Island Government and Navy Department, briefly expressed as "Non-exploitation of the natives, non-alienation of the lands, and Samoa for the Samoans" is carefully followed in furthering the best interests of the people. The present Governor is Capt. M. Milne, U.S.N. The seat of the Naval Island Government is Pago Pago, Tutuila.

Population.—On July 1, 1937 the total population, including all islands of American Samoa, was 11,906. The present population represents an increase of more than 100% since 1900, the increase being due to the cessation of internecine warfare and the sanitary and medical work of the medical officers of the United States Navy. Samoan customs and culture are preserved and respected by the authorities.

Agriculture.—The development of agricultural and industrial interests in a race not given to such pursuits has been difficult. However, in addition to the tropical fruits and vegetables native to the islands, various trees and crops have been introduced and developed by means of an Island Government experimental farm, the value of which is gradually being realized by the natives. The most important product and export is copra, and the Island Government, at the request of the people, handles the sale of that crop. A severe hurricane on Jan. 16, 1936 caused great damage to property and crops, and the destruction of coconut trees at that time is still being felt.

Trade and Commerce.—Practically the only means of trade with the rest of the world is provided by the Matson Navigation Company which maintains a four-week schedule between San Francisco, Honolulu, Pago Pago, Suva, Fiji and Sydney, carrying passengers, mail and freight. Copra is the only export of importance. During the fiscal year 1937, 598 tons of copra valued at $39,486 were exported.

Banking.—The only bank is the Bank of American Samoa founded in 1914, by Executive Order of the Governor. That bank conducts a general commercial and savings business, its capital stock of $25,000 is owned by the Island Government and its principal officers and directors are naval officers of the Island Government. The bank is in sound financial condition and the volume of its business has increased steadily.

Health and Sanitation.—Public health and sanitary conditions are maintained at a high standard by the naval medical officers. There are no civilian physicians in the islands, and the medical officers of the Department of Health of the Island Government treat the entire native population without cost to the people. Hospitalization is modern and native nurses are trained by the naval personnel.

Education.—The public school attendance at the end of the past school year was 2,200. There are 21 schools under the local Department of Education employing 63 teachers, all but 6 of whom are natives who have been trained as teachers. Special emphasis is given to instruction in the English language, health and sanitation, Samoan arts and crafts, agriculture, and manual and domestic arts. In addition to the public schools there are five parochial schools conducted by missionaries of various denominations with a total attendance of about 500.

AMERICAN EQUATORIAL ISLANDS

By Richard B. Black

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COLONIZATION AND GOVERNMENT

The Equatorial Islands of Jarvis, Baker and Howland were manned by the Department of Commerce in March, 1935, under the direction of William T. Miller, Superintendent of Airways, Bureau of Air Commerce. The men in the colonizing groups were American citizens, for the most part of Hawaiian ancestry. By Executive Order of May 13, 1936, the islands were placed under the Division of Territories and Island Possessions, Department of the Interior, and a fund was appropriated for their administration. Richard B. Black, Field Representative under this Division, arrived in Honolulu from Washington on July 8, 1936, and established an office in the Iolani Palace, from which he directs by radio the affairs of the islands and leads quarterly expeditions carrying supplies, water, and changes of personnel to the three stations.

DESCRIPTION

Jarvis Island lies 23 miles south of the Equator and 1,310 nautical miles almost directly south of Honolulu. Baker and Howland are 38 miles apart and lie just north of the Equator about 1,000 nautical miles west of Jarvis. The largest of the three is Jarvis, and it has an area of only 1,000 acres. There are no anchorages and heavy surf breaks almost continuously on the fringing platform reefs. Landings are made in surf-boats on the somewhat protected western or lee sides.

IMPORTANCE OF THE ISLANDS

The positions of Jarvis almost on a course to American Samoa and of Howland and Baker on a great-circle course toward Australia make the islands of potential importance as bases or emergency landing fields on proposed air routes to the Antipodes, and of immediate importance for the systematic study over a period of time of the meteorological conditions along these routes. Present long distance ocean air routes employ the heavy flying boat but there is no assurance that the more efficient and swift land plane will not in the future fly these lanes, at which time the three American Equatorial Islands will be essential stations.

STATUS OF AMERICAN POSSESSION

The act of manning the islands by American government personnel caused much international comment in 1935 and 1936, since Great Britain had assumed that these islands were a part of a British sphere of influence in the Pacific, but there was no cause for comment since the act could be considered as one of repossession, at least two of the islands having been discovered by American whalers in the early nineteenth century, and all three having been worked for their guano deposits during a period of 20 or more years in the late part of the same century under the American Guano Act of 1857. These facts apply to Christmas, Fanning, and Washington Islands in the vicinity of Jarvis, and to the entire Phoenix Group south of Howland and Baker, all of which are now, following the American repossession, declared by the British to be definitely British.

DEVELOPMENT

Permanent dwellings and aerological stations were built in the early months of Department of the Interior administration, and in January, 1937, tractors and grading equipment were landed at Howland and an emergency landing field was built with three runways 5,200, 3,050, and 2,500 feet long. Amelia Earhart Putnam was to have been the first to use this field and a cutter was standing by the island during the March attempt, and again during the easterly around-the-world attempt which ended disastrously on the flight from Lae, New Guinea, to Howland. For some unexplained reason the plane failed to use the Navy station ship *Ontario,* lying half way between Lae and Howland, and failed to "home in" on the strong signals of the *Itasca* at Howland.

On the Eleventh Expedition, from which the writer has just returned. materials were landed on the islands for the construction of 20-foot coral lighthouses. With the cooperation of the U. S. Lighthouse Service, 300 millimeter flashing acetylene lights will be placed in operation during the next expedition. Dr. Ernest Gruening, Director of the Division of Territories and Island Possessions, accompanied the Eleventh Cruise to make an inspection of the islands.

THE DISTRICT OF COLUMBIA

By W. Reed West

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SURVEY OF FISCAL RELATIONS

Fiscal relations between the District of Columbia and the Federal Government have been in an unsettled state for a number of years. Several factors tend to complicate the situation. There are large amounts of Federal property which are exempt from taxation. It is contended that expenditures greater than normal are incurred in maintaining the capital city as a place of beauty. Problems have arisen in determining the value of services rendered by Federal agencies to the District and services rendered to the Federal Government and to non-residents by the District. Moreover, there is a feeling that since District residents have no local or national suffrage they should not be taxed heavily to meet expenditures in which they have no voice.

From the beginning, the Federal Government has contributed to defraying the expenses of the District. From 1790 to 1878, there was no fixed plan for its contributions, but it appears that probably they were somewhat below 40 per cent of the District expenses. From 1879 to 1920, the contribution was fixed at 50 per cent. From 1921 to 1924, it was fixed at 40 per cent. From 1925 there has been no fixed percentage, but each year a lump sum of varying amounts has been appropriated to the District. These sums have shown in general a tendency to decrease absolutely, and each year have represented a decrease proportionately to the total District budget. The contribution for 1936 was $5,700,000 or only 15.24 per cent of the District general fund, and for 1937 it was reduced to $5,000,000. These figures do not cover amounts for certain services rendered between the two governments.

A special committee, appointed by the President, was authorized to study and make recommendations upon fiscal relations, and its report was forwarded to Congress by the President on Jan. 8. The Committee reported that District taxes were lower than those in comparable American cities. It recommended that contractual arrangements be made to settle costs of all services rendered by each government to the other, that capital outlays and improvements be divided between the two in proportion to their interests, and that pending the grant of broader powers of local government the Federal Government assume any excess of governmental costs per capita over those of other comparable cities after allowing for unusual costs occasioned by Congressional enactments. These recommendations would have reduced the Federal contribution for 1937 from the $5,000,000 actually appropriated to $2,072,037.

The committee recommended local suffrage if desired by residents of the District, local control over purely local affairs, consideration of a reconstruction of the District government, and a reform of the revenue system to provide better diversification. Specific recommendations upon the latter were a reduction of the importance of the property tax, adoption of a net income tax and an inheritance or estate tax, increase of the gasolene tax, a graduation of the motor vehicle tax upon commercial vehicles with reference to weight, and a re-examination of existing business taxes. Federal property in the District was to remain exempt from local taxation except in so far as similar property might be subjected to such taxes elsewhere.

TAX CHANGES

The recommendations of the President's committee were only partially embodied in law. No action was taken upon the broad conclusions of the committee. Confronted with an estimated deficit for 1938 of over $11,-

000,000, however, immediate tax increases were imperative. Important changes in the tax structure were an increase from a flat registration fee of $1 on gasoline driven motor vehicles to $5, $8 and $12, on passenger cars according to weight, and to $15 to $150 on commercial motor vehicles and trailers according to weight. All such taxes, except those on trailers, were to be doubled for vehicles equipped with other than pneumatic tires or not propelled by gasoline. The income from the tax on gasoline used in automobiles, motor vehicles registration and titling fees, and fees for operators' permits must be used in highway construction and maintenance and in traffic regulation and policing.

The tax on real and tangible personal property was increased from 1.50 per cent to 1.75 per cent, and the collection procedure for personal property taxes was strengthened.

An inheritance tax was provided for, graduated from one per cent on inheritances by husband, wife and lineal descendants or lineal ancestors (with $5,000 exemption), three per cent on inheritances by brothers, sisters, nephews and nieces (with $2,000 exemption), and five per cent on all other inheritances (with $1,000 exemption). Property transferred for public, charitable, educational or religious purposes was exempted. A two-year provision for property transferred in contemplation of death was included.

An estate tax was levied which secures to the District the 80 per cent credit allowed by the Federal estate tax law of 1926. Both the inheritance and estate taxes are new to the District.

Business taxes were revised to include a tax on the privilege of doing business, of two-fifths of one per cent of the gross receipts above $2,000, in addition to a flat fee of $10. Railroad and express companies and certain other companies already paying taxes on gross receipts or gross earnings were exempted. Insurance companies were required to pay a flat fee of $25, and a tax of two per cent on net premium receipts in the District. On most types of insurance this was an increase of about one-half of one per cent.

The act embodying these changes was approved Aug. 17. It carried a "rider" amending the Federal anti-trust laws so as to permit agreements fixing minimum retail prices on branded articles, if not in violation of local laws, but as this is a matter of national rather than local concern, it is not discussed here.

RED RIDER

The "red rider," prohibiting payments of salary to persons teaching or advocating communism in the public schools (see THE AMERICAN YEAR BOOK for 1936) has been repealed. In the act repealing this proviso, which caused so much controversy during the time it was in force, Congress added a provision to the effect that nothing therein should "be construed as permitting the advocating of communism."

PROCEEDINGS IN ADOPTION

The District law on adoption has not been very different from the first adoption law in the country, that of Massachusetts in 1851. It made adoption mandatory if the judge found the petitioner a proper person and if the parents or guardian had given consent, and authorized a guardian ad litem where there was no parent or guardian. This procedure has now been modernized, requiring an investigation by the Board of Public Welfare both of adopter and adoptee. This will permit a study of the personal and financial fitness of the adopters and of the mentality, freedom from inherited disease and other qualities of the adoptee. A final decree may be given only after a trial period of six months. Rights of inheritance are granted to adoptees except from collateral relatives and parents of adopters (approved Aug. 25).

OTHER LEGISLATION

A uniform sales law (approved March 17) was adopted, following the model uniform law already in force in over 30 States; a licensing

system was set up for real estate brokers and salesmen (approved Aug. 25); potatoes were required to be sold only when accompanied by a label or sign giving their United States grade or by a label stating that they are ungraded (approved Aug. 12); the line between petit and grand larceny was fixed at $1.50 as the minimum for grand larceny (approved Aug. 12); the use of slugs and counterfeits in automatic machines was prohibited (approved Aug. 16); the age of consent for marriage was raised from 14 to 16 for females and from 16 to 18 for males, and a period of three days between the application for the marriage license and its issuance, was required (approved Aug. 12); the use of a prophylactic against blindness in the eyes of new-born infants was made mandatory, the health officer was directed to provide such solutions, and medical treatment for infants with inflammation of the eyes was required, with provision for free treatment through the Board of Public Welfare if necessary (approved April 27); the procedure upon liquor licenses was changed and regulations concerning importations enacted (approved Aug. 25); the annual Federal appropriation for vocational rehabilitation was raised from $15,000 to $25,000, to be matched by a like sum from the District (approved April 17); the relicensing of physicians and surgeons without resort to a special act of Congress in each case was authorized (approved August 11); bowling alleys were permitted to open at two o'clock on Sunday afternoons (approved April 14); and the revocation of automobile registration and drivers' permits of persons with unsatisfied judgments against them was authorized without the $100 limit fixed in the old law (approved Aug. 24).

PART THREE

GOVERNMENTAL FUNCTIONS

DIVISION VII

PUBLIC FINANCE AND TAXATION

NATIONAL FINANCE AND THE PUBLIC DEBT

By D. W. Ellsworth

Editor, *The Annalist*

TREASURY ATTITUDE TOWARD THE PUBLIC DEBT

The year 1937 was notable for the emergence of several developments of a fundamentally favorable nature. The most important of these was the obvious alarm with which high Treasury officials finally came to regard the further rise in the public debt in the face of the largest inflow of revenue in the history of the country. This was reflected in the budget message of Jan. 3, 1938, which showed evidence of strong internal pressure for economy from somewhere in high governmental circles. It came from the Treasury.

Unhappily the awakening came rather late. Business activity reached the peak of a boom in August, 1937. Under a sound and conservative system of public finance, a period of active business conditions such as that which prevailed generally throughout 1936 and 1937 (up to August) would be utilized for reducing expenditures, or for putting the government establishment on a generally more efficient basis, and for paying off some of the national debt. The awakening came too late to permit the accomplishment of any of these things. A new depression overtook the country in September. Unemployment increased with almost unprecedented swiftness. Relief rolls expanded. The most optimistic observer could hardly expect relief expenditures to stay within the President's January, 1938 budget estimate.

People wondered, naturally, what would be the eventual outcome of a condition such as this, where the Federal Government was unable to balance its budget with record-breaking revenues. We shall not have long to wait for some kind of an answer to this question, because the late–1937 business decline means that by 1939, unless there is unusually prompt business recovery, the Federal Government will have heavy relief expenditures to meet and much smaller tax revenues with which to meet them. Nevertheless it may be set down as a fundamental gain that the Treasury early in the year began worrying about the matter, in sharp contrast with the easy, happy-go-lucky assurance with which it dealt with the budget problem in previous years. At the year-end, at any rate, there seemed to be considerable probability that efforts to get the Federal Governments to embark on further heavy expenditures merely for the sake of pump-priming would encounter stiff opposition from the Secretary of the Treasury.

THE GOVERNMENT BOND PRICE FACTOR

Precisely what caused this changed attitude it would be presumptuous

for anybody outside the Treasury Department to attempt to explain. One reason for it, however, may have been the decline in government bond prices that began in December, 1936, and lasted until April, 1937. This decline was brought about primarily by the customary operation of economic influence; late in 1936 there began a sharp rise in business activity and commodity prices, bringing about an increased demand for commercial loans from the banks. The banks sold government bonds and increased their short-term loans merely as a matter of sound business policy. Nevertheless the Treasury became greatly alarmed over the decline in its securities and took steps to maintain their prices artificially by increased trust-fund purchases and by getting the Federal Reserve Banks to buy them in the open market.

At the same time, curiously enough, the Federal Reserve Board became alarmed over the rapid expansion in commodity prices and short-term loans, fearing "inflation," and took steps to curb the expansion by raising the reserve requirements of the member banks. While all this was going on the outlook was very confusing in view of the fact that the two efforts to control the business cycle and protect the government bond market conflicted with each other. The entire matter was settled along in October when commercial loans began to shrink, and the banks, in order to obtain some income, were again forced to enter the government bond market.

GOVERNMENT AND THE TAX PROBLEM

Another distinct gain of 1937 was a change in the attitude of the Administration toward the tax problem, particularly toward the undistributed profits tax. Some observers were inclined to find fault with the Administration for not abandoning the tax entirely, after its evil consequences had been so thoroughly demonstrated. It must be remembered, however, that when the law was proposed it represented the adoption by the President of the over-saving, under-consumption theory of the business cycle in its most violent form as advanced by Tugwell; and that the President could hardly abandon the tax without saying to the country that he had been completely misled and misinformed when he proposed it. Under the circumstances, willingness to retreat to the extent indicated by the report of the House subcommittee must be set down as a major gain. During the year there were several pieces of research done demonstrating beyond much doubt that the undistributed profits tax had been instrumental in accentuating the depression that began late in the year. Nevertheless the need for revenue is going to be great during the fiscal years 1938 and 1939, and some observers wonder whether some of those who were howling the loudest about the undistributed profits tax will not howl even louder when they discover how much the total Federal tax bill is going to be. It will have to be paid somehow.

INCREASE IN THE PUBLIC DEBT

Table I shows the increase in the national debt. Some observers would doubtless say that the increase in the calendar year 1937 was overstated by the table, since, of the increase of

TABLE I. PUBLIC DEBT OF THE UNITED STATES

(Millions of Dollars)

1934	Gross Debt	General Fund Balance	Net Debt	Annual Net Change
June 30....	27,053	2,582	24,471	
Dec. 31....	28,479	2,564	25,915	
1935				
June 29....	28,701	1,841	26,860	+2,389
Dec. 31....	30,557	2,209	28,348	+2,433
1936				
June 30....	33,779	2,682	31,097	+4,237
Dec. 31....	34,407	1,906	32,501	+4,153
1937				
June 30....	36,425	2,553	33,871	+2,774
Dec. 31....	37,279	2,973	34,306	+1,805

TABLE II. RECEIPTS AND EXPENDITURES BY FISCAL YEARS

(Millions of Dollars)

Receipts	Estimated		Actual			
	1939	1938	1937	1936	1935	1934
Internal revenue:						
Income tax	2,414	2,693	2,158	1,427	1,099	818
Miscellaneous internal revenue	2,190	2,280	2,181	2,010	1,657	1,470
Unjust enrichment tax	10	5	6	0	0	0
Social Security Act	599	571	252	0	0	0
Railroad Retirement Act	117	150	0	0	0	0
Processing tax	0	0	0	77	521	353
Total internal revenue	5,330	5,699	4,597	3,514	3,277	2,641
Customs	390	415	486	387	343	313
Miscellaneous receipts	199	206	210	216	179	162
Total receipts	5,919	6,320	5,294	4,116	3,800	3,116
Expenditures						
Regular operating:						
Departmental:						
Legislative	21	21	21	22	20	17
Agriculture	125	150	176	123	71	63
Commerce	44	41	40	44	39	31
Interior	95	123	112	78	74	50
Justice	41	40	39	38	33	32
Labor	18	24	31	27	19	13
Post Office (defic.)	18	30	39	86	64	64
State	16	18	17	17	19	12
Treasury	157	178	185	164	123	112
War (non-military)	48	48	53	46	44	41
District of Columbia	5	5	5	6	4	6
Independent offices	172	150	97	82	45	36
Total departmental	760	827	815	734	555	475
Miscellaneous:						
National defense	991	957	889	870	656	500
Veterans' benefits	539	574	1,128	2,349	606	554
Interest on public debt	976	927	866	749	821	757
Refunds, etc	51	48	48	41	39	63
Total miscellaneous	2,557	2,506	2,931	4,009	2,122	1,874
Total regular operating	3,317	3,333	3,746	4,743	2,677	2,349
Public works:						
Highways	140	280	351	244	317	268
TVA	41	46	41	49	36	11
Reclamation	60	70	52	50	41	25
River and harbor work	60	81	142	138	133	76
Flood control	64	71	55	52	39	48
Public buildings	53	74	76	72	58	79
Grants to public bodies	154	190	273	234	49	19
Other	47	66	89	74	90	87
Total public works	620	878	1,079	913	763	613
Unemployment relief:						
Direct relief	36	127	184	592	1,914	716
Work relief	1,000	1,322	1,897	1,264	11	805
CCC	230	310	386	486	436	332
Total relief	1,266	1,759	2,467	2,342	2,361	1,853
Miscellaneous expenditures:						
Loans (net)	68	−48	−307	−181	102	820
Subscriptions to stock etc	5	46	47	89	157	821
Ag. Adjustment program	586	442	516	542	743	290
Social Security	813	659	448	28	0	0
Railroad Retirement	120	140	6	0	0	0
Supplemental items	75	200	0	0	0	0
Total miscellaneous exp	1,667	1,439	710	478	1,002	1,931
Total expenditures	6,869	7,409	8,001	8,476	6,802	6,745
Deficit	950	1,088	2,707	4,361	3,002	3,630

$1,805,000,000, slightly more than $1,000,000,000 represented gold in the inactive fund. This would leave the net change of less than $1,000,000,000, the smallest annual increase in the net debt since 1930. This, as already stated, would be a matter for great gratification except for the fact that, with business active and tax revenues the highest on record, the Administration should have brought about a large reduction in the national debt.

SOURCES OF TAX RECEIPTS

As is regularly the case, the bulk of ordinary receipts in the fiscal year 1937 came from relatively few sources, according to the annual report of the Secretary of the Treasury. Nine domestic taxes, plus the customs duties, accounted for almost 85 per cent of the total. Among primary sources, the individual income tax ranked first, yielding close to $1,000,000,000. The corporation income tax brought in nearly $900,000,000.

A significant new source of receipts, seventh in order of size, was the taxes received under the Social Security Act. These taxes, moreover, were expected to show a rapid increase in 1938 and 1939, as shown by Table II, the first two columns of which are the budget estimates for the fiscal years which end June 30, 1938 and June 30, 1939. One can only hope that these estimates are not as over-liberal as the estimates of income tax collections appear to be. If business remains slack throughout 1938, payrolls will be low; and the Social Security tax is a percentage of payrolls.

STATE FINANCE

By Merlin H. Hunter

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GENERAL

Most of the States had legislative sessions in 1937. While changes were made in some tax laws, nothing of a very drastic nature was done. It seems either that the emergency which the legislation of a few years ago was designed to meet is still with us, or that the laws have proved so satisfactory that they are to be continued. Important changes will be noted under the following heads, while the tables will give the status of the different taxes at the end of 1937.

SALES TAXES

Legislation in 1937, instead of bringing a retrenchment in the use of sales taxes, has resulted in their extension. The provision for a tax in Maine was rejected at a referendum. Alabama now has a tax of 2% on retail sales and amusements and one of ½ of 1% on the sales price of automobiles. Kansas enacted a rate of 2% to apply to retail sales of tangible personal property, public utility services and amusements. The rate in South Dakota was increased from 2% to 3%. Several States continued taxes which were to expire automatically by statute of limitation. In order to discourage purchases without the State, Alabama, Iowa, Kansas, Oklahoma, and Utah were added to the States which levy use taxes. To the former tax Colorado levied a tax of 2% on the sale of services by professions, trades, hotels, etc. The present status of the sales tax is shown in the following table:

Alabama	Levy of 2% upon retail sales and amusements; ½ of 1% upon sale of automobiles.
Arizona	Levy upon gross proceeds of sales. Manufacturers, 1%; Motor carriers, 1%; Mining, etc., 1%; Electrical energy carriers, telephones, 1%; Sale of tangible personal property at retail, 1½%.
Arkansas	Levy upon retail sale of tangible personal property of 2%. Extends to utility services.

California.....Levy upon privilege of selling tangible personal property at retail; 3% on gross sales. Extends to use of property purchases without State.
Colorado.....Levy of 2% upon receipts from sale of tangible personal property at retail. Extends services by utilities, professions, trades, hotels, etc.
Idaho.....Levy of 2% upon receipts from sale of tangible personal property at retail. Extends to utility services.
Illinois.....Levy of 3% of gross sales for privilege of selling tangible personal property at retail. Extends to utility services.
Indiana.....Levy upon gross income. Manufacturers, ¼%; wholesalers, ¼%; utilities, 1%; banks, etc., 1%; professions and all others, 1%.
Iowa.....Levy of 2% upon gross receipts from retail sales.
Kansas.....Levy of 2% on retail sales of tangible personal property, utility services and amusements.
Louisiana.....Levy of 2% on retail sales of tangible personal property. Numerous exemptions such as food, clothing, tobacco, etc.
Maryland.....Levy of 1% on retail sales of tangible personal property.
Michigan.....Levy of 3% of gross sales for privilege of engaging in sale of tangible personal property at retail.
Mississippi.....Levy upon privilege of engaging in business. Natural products, 2%; gas, ½%; manufactures, ¼ to 1%; wholesalers, ⅛%; retailers, 2%; utilities, 2%; contractors, 1%.
Missouri.....Levy upon privilege of selling tangible personal property. 1% of gross receipts.
New Mexico.....Occupational tax on retail dealers. Rate ranges from ¼ of 1% to 2%, depending on nature of business.
New York.....Levy of 1% upon retail sales.
North Carolina.....Levy on privilege of merchandising. Wholesalers, 1/25% of gross sales, minimum, 25 per year; retailers, $1 plus 3% of gross sales.
North Dakota.....Levy of 2% on receipts of retail sales. Extends to public utility services.
Ohio.....3% upon receipts from retail sales.
Oklahoma.....Levy upon sales of tangible personal property and certain specified services and intangibles at 2%.
South Dakota.....Levy upon gross income. Manufactures, ¼%; salaries 1% to 2%; wholesalers, ¼%; retailers, 3%.
Utah.....Levy on sale of tangible personal property. 2% on receipts. Extends to utility services.
Washington.....Levy upon gross receipts for privilege of engaging in business. Natural products, 3/10% to 1%; manufacturers, ¼%; wholesalers, 1/5%; retailers, ½%; utilities, ½% to 3%.
West Virginia.....Levy upon gross sales for privilege of engaging in business. Natural products, 1% to 6%; manufacturers, 3/10%; wholesalers, 3/20%; utilities, 1% to 3%; retailers, 2%.
Wyoming.....Levy upon receipts from retail sales at rate of 2%.

TAXES ON OLEOMARGARINE

Taxes on oleomargarine continue as in the previous year. The States in which most interest exists in this type of taxation have apparently adopted satisfactory taxes. These taxes have not been as important as producers of revenue as they have been as regulatory measures, which may help to account for the apparent lack of recent interest in them. The following table shows the tax levied upon oleomargarine by the different States:

Alabama.....10 cents per pound.
Arkansas.....10 cents per pound.
California.....10 cents per pound.
Colorado.....10 cents per pound; $25 license on manufacturer; $25 license on wholesaler.
Florida.....10 cents per pound.
Georgia.....10 cents per pound.
Idaho.....5 cents per pound, uncolored; 10 cents per pound colored. $200 license on wholesaler; $50 license on retailer.
Iowa.....5 cents per pound.
Kansas.....10 cents per pound.
Maine.....10 cents per pound.
Minnesota.....10 cents per pound; $1 license on all producers and dealers.
Nebraska.....15 cents per pound; $100 license on manufacturers; $50 license on wholesalers; $5 license on retailers.
New Mexico.....10 cents per pound.
North Carolina.....10 cents per pound.
North Dakota.....10 cents per pound; $10 license on manufacturers; $5 license on wholesalers; $2 license on retailers.
Oklahoma.....10 cents per pound; license ranging from $10 on manufacturers to $2 on boarding houses.

Tennessee.....10 cents per pound; license ranging from $5 on manufacturers to $1 on boarding houses.
Utah.....5 cents per pound, uncolored; 10 cents per pound colored; $5 license on retailers.
Washington.....15 cents per pound.
Wisconsin.....6 cents per pound; $1,000 license on manufacturer; $500 license on wholesaler; $25 license on retailer, hotel, restaurant; $5 license on bakery, confectionery.
Wyoming.....10 cents per pound.

PERSONAL INCOME TAXES

The legislatures of 1937 enacted many laws in regard to personal income taxes. Most of these, however, were in States which already had such taxes. In only Maryland and Colorado were income taxes enacted for the first time. In Colorado the rates range from 1% to 6%, the latter applying to all incomes above $10,000. In Maryland a flat rate of ½ of 1% was levied upon net taxable incomes.

Most of the amendments took the form of a change in rates or exemptions. In Georgia, for example, the rates were changed from 1% to 5% to 1% to 7%. The top bracket now begins at $20,000 instead of $25,000 while exemptions have also been reduced. In Iowa, on the other hand, exemptions were increased. In Minnesota, rates were increased to 1% to 10%, with deductions from calculated tax instead of exemptions. With all amendments taken into account, the present personal income tax status in the different States is shown in the following table:

State	Rate %	Highest Bracket Begins	Exemption		
			Single	Head of Family	Dependents
Alabama	1½–5	$ 5,000	$1500	$3,000	$300
Arizona	1–4½	10,000	10 from tax	20 from tax	4 from tax
Arkansas	1–5	25,000	1500	2,500	400
California	1–15	250,000	1000	2,500	400
Colorado	1–6	10,000	1000	2,500	400
Delaware	1–3	10,000	1000	2,000	200
Georgia	1–7	20,000	1000	2,500	400
Idaho	1½–8	5,000	700	1,500	200
Iowa	1–5	4,000	10 from tax	20 from tax	5 from tax
Kansas	1–5	4,000	10 from tax	20 from tax	5 from tax
Kentucky	2–5	7,000	750	1,500	200
Louisiana	2–6	5,000	1000	2,500	400
Maryland	½		1000	2,500	400
Massachusetts	1½ to 6 and 10% of tax	Type of income	2000	2,500	250
Minnesota	1–10	12,500	10 from tax	30 from tax	5 from tax
Mississippi	2½–6	15,000	750	1,500	200
Missouri	1–4	9,000	1000	2,000	200
Montana	1–4	6,000	1000	2,000	300
New Mexico	1–4	100,000	1000	1,500	200
New York	2–7	9,000	1000	2,500	400
North Carolina	3–6	6,000	1000	2,000	200
North Dakota	1–15	15,000	5 from tax	15 from tax	2 from tax
Oklahoma	1–9	8,000	850	1,700	300
Oregon	2–7	5,000	800	1,500	300
Pennsylavnia	2–8	100,000	1000	1,500	400
South Carolina	2–5	6,000	1000	1,800	200
South Dakota	2–8	318,000	6 from tax	12 from tax	2 from tax
Utah	1–5	5,000	600	1,200	300
Vermont	2 on net income, 4 on interest and dividend		1000	2,000	250
Virginia	1½–3	$5,000	1000	2,000	250
Washington	3–7	3,000	1000	2,500	400
West Virginia	1–4	3,000	1000	2,000	300
Wisconsin	1–7+ 60% of tax	12,000	8 from tax	17.50 from tax	4 from tax

TAXATION OF CHAIN STORES

The number of States which levy taxes on chain stores continues to increase. Within the year, such taxes were levied by Georgia, Minnesota, Montana, Pennsylvania, South Dakota and Tennessee. The Montana law has been held invalid. The former tax in Maine was repealed while that of Wisconsin lapsed. The United States Supreme Court is still being called upon to pass upon the constitutionality of method by which chain stores are taxed. The most interesting case was that in which the Court upheld the Louisiana tax in which the payment is based upon the total number of units in the chain, whether they are located in Louisiana or not. The following table shows the present status of chain store taxation:

State	Maximum Rate	Applicable to stores above
Alabama	$ 75	20
California	500	10
Colorado	300	24
Georgia	200	40
Florida	400	16
Idaho	500	19
Indiana	150	20
Iowa	155	50
Kentucky	1/20 of 1% to 1% on gross sales	
Louisiana	550	500
Maine	50	25
Maryland	150	20
Michigan	250	25
Minnesota	350	151
Mississippi	300	40%
Montana	30	10
North Carolina	225	200
Pennsylvania	(constitutionality in question)	
South Carolina	150	30
South Dakota	250	40
Tennessee	3 upon each 100 sq. ft. floor space	
Texas	750	50
West Virginia	250	75
Wisconsin	250	25

GASOLINE TAXES

The year has seen no retrenchment in the use of gasoline taxes. In four States, in fact, Minnesota, Nebraska, New York, and Rhode Island, the tax upon gasoline was increased by 1¢ a gallon. More of a tendency to direct a part of the receipts to other than highway purposes has also prevailed. Unemployment relief has been the most successful claimant for such funds. The rates levied by the different States are shown in the following table:

State	Cents per Gallon 1937
Alabama	6
Arizona	5
Arkansas	6½
California	3
Colorado	4
Connecticut	2
Delaware	4
Florida	8
Georgia	6
Idaho	5
Illinois	3
Indiana	4
Iowa	3
Kansas	3
Kentucky	5
Louisiana	5
Maine	4
Maryland	4
Massachusetts	3
Michigan	3
Minnesota	4
Mississippi	6
Missouri	2
Montana	5
Nebraska	6
Nevada	4
New Hampshire	4
New Jersey	3
New Mexico	5
New York	4
North Carolina	6
North Dakota	3
Ohio	4
Oklahoma	4
Oregon	5
Pennsylvania	3
Rhode Island	3
South Carolina	6
South Dakota	4
Tennessee	7
Texas	4
Utah	4
Vermont	4
Virginia	5
Washington	5
West Virginia	4
Wisconsin	4
Wyoming	4

TOBACCO TAXES

The use of a tax on tobacco continues about as during the last few years. The productiveness of general sales taxes has probably prevented a further extension of this particular type of tax. The following table indicates the States which use the tax together with the most important rates:

State	Tax on Cigars	Tax on Cigarettes
Alabama	$1 per 1000 to $12.50 per 1000 depending on retail price.	1¢ for each 5¢ retail price per package.
Arizona	1¢ per three to 1¢ per cigar depending on retail price.	2¢ per 20 or fraction thereof.
Arkansas	10% of retail price.	$2.50 per 1000.
Connecticut	———	1 mill per cigarette.
Georgia	10% of retail price.	10% of retail price.
Iowa	———	1 mill to 2 mills depending on size.
Kansas	———	2¢ per 20 or fraction thereof.
Louisiana	$2 per 1000 to $12.50 per 1000 depending on the retail price.	1/5¢ each cigarette.
Mississippi	1¢ on each 5¢ retail price or fraction thereof.	1¢ on each 5¢ retail price or fraction thereof.
North Dakota	———	1½ mills each and 2 mills each depending on size.
Ohio	———	1¢ on each 10 or fraction thereof.
Oklahoma	———	1½¢ per package of 10 or less to $1.50 per 1000.
Pennsylvania	———	1¢ per 10 cigarettes.
South Carolina	Less than 3 lbs. per 1000, 1¢ per 10 to $10 per 1000.	1¢ per each 5¢ retail price or fraction thereof.
South Dakota	———	1½ mills each to 4 mills each depending on weight.
Tennessee	10% of retail price.	1/5¢ on each cigarette; 20% when retail price over 1¢.
Texas	———	Less than 3 lbs. per 1000, $1.50. More than 3 lbs. per 1000, $3.50.
Utah	———	Not more than 3 lbs. per 1000, 1 mill each. More than 3 lbs. per 1000, 2 mills each.

CORPORATION AND BUSINESS TAXES

The method of taxing corporations has been changed but little. New York continues to be the only State which levies a tax upon the net income of unincorporated business. This is 4% while the tax upon the income of corporations is 6%. The rather rapid trend towards net income as the base upon which to tax corporations seems definitely to be slowed up. The States which tax the net incomes of corporations with the rates in effect are shown in the following table:

State	Rate in %
Alabama	3
Arizona	1–5
Arkansas	2
California	4
Connecticut	2
Georgia	4
Idaho	1–4
Iowa	2
Kansas	2
Kentucky	4
Louisiana	4
Massachusetts	2½
Minnesota	1–5
Mississippi	2½–6
Missouri	2
Montana	2
New Mexico	2
New York	6
North Carolina	6
North Dakota	3
Ohio	6
Oklahoma	6
Oregon	8
Pennsylvania	6
South Carolina	4½
South Dakota	1–8
Tennessee	3
Utah	3
Vermont	2
Washington	4
Wisconsin	2–6 & surtax
Virginia	3

DEATH DUTIES

All States except Nevada make a levy upon the transfer of property at death. Arizona is the only State which made any substantial change within the year. Two States, however, Colorado and North Carolina, enacted gift taxes, that is, a tax levy upon gifts made before death. This is presumably to prevent evasion of

inheritance or estate taxes. The present status of death duties in the different States is shown in the following table:

INHERITANCE TAXES

State	Rate range direct heirs in per cent	Highest rate applies to amounts over (000 out)	Rate range collateral heirs in per cent	Highest rate applies to amounts over (000 out)
Arizona	1–25	$ 500	2–25	$ 500
Arkansas	1–10	1000	2–40	1000
California	1–10	500	4–12	500
Colorado	2–8	500	3–16	200
Connecticut	1–4	200	2–8	200
Delaware	1–4	200	2–8	200
Idaho	2–15	500	4–30	500
Illinois	2–14	500	6–16	500
Indiana	1–10	1500	5–20	1000
Iowa	1–8	300	5–15	300
Kansas	½–5	500	3–15	500
Kentucky	2–16	2000	2–16	60
Louisiana	2–3	20	5–7	20
Maine	1–3	250	4–6	250
Maryland	1–1 1/5	20	7½	flat
Massachusetts	1–9	1000	3–12	flat
Michigan	2–8	750	10–15	flat
Minnesota	1–6	100	3–20	100
Missouri	1–6	400	3–30	400
Montana	2–8	100	4–32	100
Nebraska	1	50	4–12	50
New Hampshire	none	—	7½	flat
New Jersey	1–16	3700	5–16	3700
New Mexico	1	5	flat	flat
North Carolina	1–12	3000	4–25	3000
Ohio	1–4	200	5–8	200
Pennsylvania	2	flat	10	flat
Rhode Island	½–3	1000	5–8	1000
South Carolina	1–6	300	2–14	300
South Dakota	2–8	100	3–20	1000
Tennessee	1–7	500	5–15	500
Texas	1–6	1000	3–20	1000
Vermont	1–5	250	5	flat
Washington	1–10	200	2–20	200
West Virginia	3–13	1000	4–30	1000
Wisconsin	2–10	500	4–40	500
Wyoming	2	flat	4–6	flat

BANK TAXATION

As with corporations in general, the recent trend towards the use of net income as a method for taxing banks seems to have run its course. The present status of the taxation of banks on net income is seen in the following table:

State	Rate upon net income
Alabama	5
California	2–6
Massachusetts	6
New York	4½
Oklahoma	1–6
Oregon	8
Idaho	1–6
South Carolina	4½
Utah	3
Wisconsin	2–6 & surtax

INDEBTEDNESS OF STATES

Recent figures of the indebtedness of the States are not available, but, in general, this has not changed a great deal in the last few years. The table next page will give some idea of the comparative indebtedness of the different States.

MISCELL ANEOUS TAX DEVELOPMENTS

Many items of a miscellaneous nature occupied the attention of legislators. While many of these are relatively unimportant in relation to the fiscal system as a whole, yet they are of sufficient interest to deserve mention.

The rapid development in the use

State	1912		1932	
	Total (000 out)	Per Capita	Total (000 out)	Per Capita
Alabama	$13,132	$ 5.95	$ 82,342	$30.90
Arizona	3,065	13.28	3,677	8.34
Arkansas	1,236	.76	164,423	88.16
California	10,223	3.83	145,723	24.67
Colorado	3,134	3.70	6,747	6.45
Connecticut	7,111	6.12	108	.07
Delaware	763	3.70	2,072	8.63
Florida	619	.77	391	.26
Georgia	6,934	2.57	12,488	4.29
Idaho	2,143	5.92	6,961	15.61
Illinois	2,273	.39	221,404	28.58
Indiana	1,350	.49	4,730	1.45
Iowa	357	.16	16,495	6.66
Kansas	243	.14	21,810	11.53
Kentucky	4,441	1.90	16,224	6.16
Louisiana	13,546	7.89	83,743	39.41
Maine	1,255	1.67	27,219	34.02
Maryland	7,334	5.56	31,198	18.99
Massachusetts	79,551	22.78	62,856	14.69
Michigan	7,089	2.41	60,582	12.21
Minnesota	1,345	.63	40,156	15.55
Mississippi	4,461	2.41	36,319	17.94
Missouri	4,671	1.40	103,302	28.33
Montana	1,513	3.73	9,316	17.33
Nebraska	374	.31	929	.67
Nevada	608	6.70	1,370	14.89
New Hampshire	1,956	4.50	6,505	13.96
New Jersey	642	.24	62,198	15.05
New Mexico	1,218	3.41	11,407	26.53
New York	86,205	9.05	463,068	36.14
North Carolina	8,059	3.54	177,210	54.83
North Dakota	820	1.29	5,005	7.32
Ohio	5,142	1.05	7,696	1.15
Oklahoma	6,931	3.74	11,438	4.74
Oregon	31	.04	33,388	34.60
Pennsylvania			75,858	7.81
Rhode Island	5,127	9.02	16,807	24.15
South Carolina	6,190	3.98	77,984	44.74
South Dakota	370	.58	15,510	22.19
Tennessee	11,812	5.32	94,032	35.55
Texas	4,756	1.14	10,317	1.75
Utah	1,430	3.62	5,694	11.08
Vermont	570	1.58	9,545	26.51
Virginia	22,043	10.46	25,983	10.68
Washington	1,556	1.21	8,257	5.22
West Virginia			86,394	49.20
Wisconsin	2,251	.93	1,184	.40
Wyoming	122	.77	5,568	24.42

of auto-trailers has created the problem as to what levy should be made against them. There is great lack of uniformity among the States in this respect. In general, the levy increases with the weight of the trailer. In Washington, for example, the maximum charge is $250. In some States, also, the fee for motor vehicle registration has been changed.

Some tendency is noted to extend severance taxes to include the extraction of more natural resources. In New Mexico coal and other minerals are now taxed as well as oil and gas. Utah has levied a tax of 1% upon the gross receipts from ore.

Considerable agitation has arisen over homestead exemptions from property tax. Such legislation has been enacted in several States, although it has been far from uniform. Some of the States which have recently enacted such legislation are Arkansas, Alabama, Georgia, Florida, Indiana, Tennessee, Oklahoma, Oregon, and South Dakota.

A few States have levied taxes upon

certain products the proceeds of which are to be used for the advertisement of the product. Thus, Florida levies a tax upon citrus fruits; Idaho and Maine levy upon potatoes, while Tennessee permits cities to levy taxes the receipts from which are to be used in advertising.

Some reorganization in the fiscal setup may be noted in a few States. A Department of Revenue has been created in Louisiana, a single tax commissioner has been established in Oklahoma, and a Tax Supervision Department in Arkansas.

In several States, special studies of the fiscal problems are under way. States that are most active in this respect are New Jersey, New York, North Dakota, Oregon, Utah, New Mexico, Pennsylvania and Rhode Island.

MUNICIPAL FINANCE

By H. K. Allen

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CONTINUED IMPROVEMENT

An examination of the financial condition of municipalities for the year 1937 showed definite signs of a continuation of the improvement which began in 1934. This further improvement was indicated especially by a decline in tax delinquencies, an increase in the collection of back taxes, and a slight decrease in the number of defaults. The decline in tax delinquencies and the increase in back tax collections resulted from the general improvement in business conditions and from the activities of various Federal agencies. The reduction in the number of defaults was largely attributable to the improvement in tax collections.

EXPENDITURES

The most recent year for which the comprehensive statistics of the Bureau of the Census are available is 1935. Unfortunately, the figures for 1932 to 1935 are limited to cities having a population of over 100,000. By Executive Order of June 10, 1933, the annual collection and compilation of financial statistics were limited to cities of over 100,000 population until after the fiscal year closing June 30, 1935.

MUNICIPAL EXPENDITURES

(000 omitted)

Operation and Maintenance of General Departments: 146 Cities

Year	Total	General Government	Protection to Person and Property	Health and Sanitation	Highways
1935[1]	$1,797,798	$139,144	$307,733	$135,892	$111,358
1934[1]	1,744,975	135,766	298,758	134,296	111,306
1933[1]	1,727,043	142,296	298,852	138,921	110,652
1932[1]	1,806,517	149,909	328,797	160,010	127,670
1931	2,229,492	183,171	421,055	202,502	181,314
1930	1,820,905	163,614	361,945	180,553	149,268
1929	1,730,288	140,521	339,816	174,858	147,375
1928	1,656,989	147,250	328,102	167,979	138,936
1927	1,562,615	136,848	315,362	160,259	137,892
1924	1,287,484	111,856	259,275	130,388	109,807
1922	1,155,691	105,174	234,199	115,488	98,763
1919	697,319	72,585	146,763	75,847	65,003
1915	546,568	62,793	120,696	55,758	60,615
1911	452,899	53,766	106,120	45,691	52,214
1907	367,367	42,703	87,885	36,899	42,718
1903	278,173	30,842	71,020	25,807	34,208

[1] Statistics for 1932 to 1935 are for 94 cities having a population over 100,000. All other data are for cities over 30,000.

Year	Charities, Hospitals, and Corrections	Schools	Libraries	Recreation	Miscellaneous
1935	$337,990	$545,718	$20,840	$47,943	$151,180
1934	345,214	526,864	20,271	48,306	124,194
1933	292,212	542,034	19,744	60,097	122,235
1932	234,419	629,353	——[1]	63,117	113,242
1931	201,896	839,577	——[1]	78,952	121,027
1930	138,051	637,196	24,515	66,060	99,692
1929	116,147	622,587	23,029	61,863	94,091
1928	111,052	598,065	21,847	56,038	87,715
1927	99,806	560,668	20,167	53,839	77,731
1924	79,239	475,725	15,782	41,819	63,590
1922	76,627	422,843	14,326	38,703	49,603
1919	53,262	216,701	9,079	24,204	33,870
1915	38,285	162,332	7,134	20,416	18,535
1911	30,647	127,604	5,939	17,114	13,801
1907	24,408	102,395	4,989	11,794	13,572
1903	18,280	80,853	4,067	7,457	5,634

[1] Expenditures for libraries and schools combined in 1931 and 1932.

While some of the absolute expenditures just noted may appear large, yet little significance can be attached to them. The size of an expenditure becomes intelligible in terms of service when one discovers the number among whom it is divided. The per capita expenditures of cities, both as a whole and for particular items, have varied greatly from time to time, but the general tendency has been to increase. The following table shows the change in per capita expenditures for selected years:

PER CAPITA EXPENDITURES

Year	Total	General Government	Protection to Person and Property	Health and Sanitation	Highways	Charities, Hospitals, and Corrections	Education Schools[1]	Libraries[2]	Recreation[2]	Miscellaneous[1]
1935	$47.78	$3.70	$8.18	$3.61	$2.76	$8.98	$15.05		$1.27	$4.02
1934	46.43	3.61	7.95	3.57	2.97	9.18	14.56		1.29	3.30
1933	46.08	3.80	7.98	3.71	2.95	7.80	14.99		1.60	3.26
1932	47.87	3.97	8.71	4.24	3.38	6.21	16.68		1.67	3.00
1931	46.18	3.79	8.72	4.19	3.75	4.18	17.39		1.63	2.51
1930	44.29	3.82	8.68	4.28	3.64	3.12	16.28	.61	1.59	2.28
1929	43.45	3.66	8.46	4.33	3.70	2.78	16.14	.59	1.55	2.25
1928	42.43	3.66	8.33	4.24	3.56	2.70	15.80	.57	1.44	2.14
1927	40.77	3.46	8.13	4.13	3.60	2.49	15.08	.53	1.40	1.94
1924	35.61	3.01	7.10	3.55	3.07	2.08	13.52	.44	1.15	1.67
1922	33.15	2.94	6.66	3.25	2.87	2.08	12.50	.41	1.09	1.34
1919	21.63	2.22	4.53	2.34	2.04	1.59	6.88	.28	.74	1.01
1915	18.45	2.10	4.06	1.86	2.06	1.26	5.58	.24	.68	.61
1911	17.62	2.08	4.12	1.77	2.04	1.17	5.04	.23	.65	.53
1907	15.95	1.86	3.80	1.59	1.91	1.05	4.42	.21	.51	.59
1903	13.19	1.46	3.35	1.21	1.64	.86	3.86	.10	.35	.27

[1] Payment for pensions are included in column "Miscellaneous" for the years 1911 to 1928 inclusive; for the years 1903 to 1909 inclusive, they are included with expenses of police, fire and school departments.

[2] Payments for expenses of art galleries and museums are included in column "Recreation" for the years 1911 to 1928 inclusive; for the years 1903 to 1909 inclusive, they are included with the expenses of libraries; expenditures for libraries and schools are combined for the years 1931 to 1935.

IMPORTANCE OF DIFFERENT SERVICE EXPENDITURES

There is a wide difference in the importance attached to the different functions performed by municipalities. While over a period of years there has been some change in the relative importance of some of the items, it is interesting to note that expenditures for education have always been far larger than any other, and that the relative importance of this item up to 1932 tended to increase with the years. Protection and highways have commanded a smaller percentage of the expenditures than formerly. The most significant development in recent years, it will be noted, is the increase in expenditures for charities, hospitals, and corrections. The following table shows the relative importance of the different services over a period of years:

PERCENTAGE OF EXPENDITURES FOR DIFFERENT MUNICIPAL FUNCTIONS

Year	General Government	Protection to Person and Property	Health and Sanitation	Highways	Charities, Hospitals, Corrections	Education Schools	Libraries[1]	Recreation	Miscellaneous
1935	7.7	17.1	7.5	6.2	18.8	31.6		2.7	8.4
1934	7.8	17.1	7.7	6.4	19.8	31.4		2.8	7.1
1933	8.2	17.3	8.1	6.4	16.9	32.5		3.5	7.1
1932	8.3	18.2	8.9	7.1	13.0	34.8		3.5	6.3
1931	8.2	18.9	9.1	8.1	9.1	37.6		3.5	5.4
1930	8.6	19.6	9.7	8.2	7.0	36.8	1.4	3.6	5.1
1929	8.4	19.5	10.0	8.5	6.4	37.2	1.4	3.6	5.2
1928	8.6	19.6	10.0	8.4	6.4	37.2	1.4	3.4	5.0
1927	8.5	20.0	10.1	8.8	6.6	37.0	1.3	3.4	4.8
1924	8.5	19.9	10.0	8.6	5.9	38.0	1.2	3.2	4.7
1922	8.9	20.1	9.8	8.7	6.3	37.7	1.2	3.3	4.0
1919	10.2	21.0	10.8	9.4	7.3	31.8	1.3	3.4	4.7
1915	11.4	22.0	10.1	11.2	6.8	30.2	1.3	3.7	3.3
1911	11.8	23.4	10.1	11.6	6.6	28.6	1.3	3.7	3.0
1907	11.7	23.8	9.9	12.0	6.6	27.7	1.3	3.2	3.6
1903	11.1	25.3	9.2	12.4	6.5	29.3	1.5	2.7	2.1

[1] Percentages for schools and libraries combined for the years 1931 to 1935.

INTEREST AND OUTLAY PAYMENTS

The expenditures just described are designated as "expenses" by the Census Bureau. In addition to these are a number of other expenditures, the most important of which are for interest and outlays. The interest payments are for the funded and floating debt, special assessment loans, and other minor types of borrowing. In 1935 the total interest payment was $340,770,000.

Expenditures for outlays comprise the amounts paid for the acquisition and construction of more or less permanent improvements, including payments for additions made to those previously acquired or constructed. Such payments in 1935 amounted to $358,400,000 in comparison with $304,404,000 for the preceding year.

SOURCES OF REVENUE

Property Taxes.—The revenue of cities arises from a number of sources. In most cities more than 90 per cent of the funds which go into the general revenue fund come from the general property tax. This is a tax levied against real and personal property. In addition to the general property tax the Census Bureau designates certain taxes as special property taxes. Such include taxes upon the capital stock of corporations, upon savings banks and other financial institutions and upon insurance companies. Included in this, also would be taxes levied upon mortgages at time of recording, taxes upon incomes and estates, upon investments, and a wide range of specific taxes.

Poll and Business Taxes.—In many cities, also, some form of poll

tax continued to be used, although such taxes are much less important than formerly. No generalization can be made as to method of levy since this varies greatly from city to city. In addition, business and non-business license taxes make up a large group of levies upon different types of business activities, some of which, of course, are levied primarily for regulative purposes. The latter include such levies as those upon dogs, dance halls, etc. Receipts from special assessments constitute an important item, but they do not enter the general revenue fund. In some places at a particular time subventions and grants are an important source of income, while in some cities, also, the earnings from public enterprises are not unimportant. The relative importance of the major sources of revenue over a period of years is shown in the following table:

PERCENTAGE OF RECEIPTS FROM DIFFERENT SOURCES OF REVENUE

Year	The General Property Tax	Other Taxes	Special Assessments	Subventions and Grants. Donations and Pension Assessmetns	Earnings of Public Service Enterprises	Other Revenues
1935	60.2	6.8	1.7	15.6	9.5	6.2
1934	62.6	5.3	2.2	13.5	9.8	6.6
1933	64.3	4.3	2.4	12.3	9.5	7.2
1932	66.2	4.7	3.9	8.5	9.3	7.4
1931	66.2	4.7	3.9	8.5	9.3	7.4
1930	65.9	6.2	6.7	5.8	9.4	5.9
1929	64.7	6.4	7.2	5.8	9.8	6.1
1928	66.1	5.8	7.6	5.4	9.2	5.9
1927	66.1	5.7	7.7	4.9	9.6	6.2
1924	66.1	5.7	5.9	5.3	10.3	6.8
1922	66.9	5.2	4.8	5.9	9.0	8.2
1919	66.0	7.6	5.6	4.1	10.2	6.4
1915	62.4	7.8	8.5	4.2	10.0	6.9
1911	61.9	8.7	8.4	4.6	10.6	5.8
1907	59.4	10.6	8.2	4.8	11.2	5.8
1903	61.4	9.8	7.6	4.3	11.5	5.5

PER CAPITA RECEIPTS FROM DIFFERENT SOURCES

That the tax burden imposed by cities has been increasing much more rapidly than population is readily seen when one notes the change in the per capita amounts collected from different sources over a period of years as revealed in the following table:

Year	Total	The General Property Tax	Other Taxes	Special Assessments	Subventions and Grants, Donations, and Pension Assessments	Earnings of Public Service Enterprises	Other Revenues
1935	$77.64	$46.72	$5.26	$1.32	$12.10	$7.37	$4.87
1934	72.13	45.17	3.77	1.61	9.71	7.09	4.78
1933	66.88	43.02	2.88	1.59	8.25	6.36	4.78
1932	68.82	45.57	3.24	2.70	5.84	6.42	5.03
1931	70.84	46.90	3.46	3.86	4.79	6.89	4.94
1930	73.32	48.34	4.57	4.91	4.25	6.92	4.33
1929	69.63	45.07	4.43	5.01	4.02	6.82	4.28
1928	72.11	47.67	4.18	5.52	3.87	6.65	4.23
1927	69.77	46.09	3.95	5.36	3.40	6.67	4.29
1924	58.41	38.59	3.33	3.43	3.12	6.00	3.96
1922	53.57	35.85	2.80	2.58	3.13	4.83	4.38
1919	35.26	23.29	2.68	1.98	1.43	3.61	2.27
1915	30.00	18.73	2.36	2.54	1.26	3.03	2.08
1911	28.07	17.37	2.44	2.35	1.30	2.98	1.63
1907	24.67	14.64	2.63	2.02	1.18	2.77	1.43
1903	21.14	12.98	2.06	1.60	.91	2.42	1.16

FUNDED AND FLOATING INDEBTEDNESS

Receipts from sources of revenue may either just pay expenses, more than pay expenses, or fail to pay them. In many cases the administration of the finances has planned for a surplus but because of a shrinkage in revenues has had to resort to borrowing.

In the calculations of the Census Bureau municipal indebtedness is divided into two distinct groups, funded debt and floating debt. The former includes all obligations represented by formal investments which have a number of years to run and for the redemption of which no assets other than a sinking fund have been specifically designated. The latter, on the other hand, includes such indebtedness as is evidenced by warrants and accounts payable, by short term bonds, etc. The gross indebtedness is, of course, the total amount, while to subtract from this the value of the assets in a sinking fund will indicate the net indebtedness. The following table shows the total indebtedness, the sinking fund assets, and the net indebtedness for certain years. The latest statistics that are available for 1931 to 1935 give only net indebtedness.

MUNICIPAL INDEBTEDNESS

(000 omitted)

Year	Funded or Fixed, and Floating Debt	Sinking Fund Assets		Net Debt	
		Amount	Per Capita	Amount	Per Capita
1935	$.....[1]	$.....[1]	$.....[1]	$6,397,603	$170.03
1934	[1]	[1]	[1]	6,380,478	169.76
1933	[1]	[1]	[1]	6,360,586	169.70
1932	[1]	[1]	[1]	6,289,078	166.66
1931	[1]	[1]	[1]	6,328,778	159.70
1930	7,808,379	1,840,816	47.20	5,967,563	153.02
1929	7,233,151	1,703,316	44.45	5,529,835	144.33
1928	6,860,660	1,607,178	42.72	5,253,482	139.27
1927	6,456,781	1,513,273	41.10	4,943,507	134.27
1924	5,057,023	1,215,043	34.82	3,481,980	110.09
1922	4,332,114	1,051,468	31.27	3,280,645	97.57
1919	3,352,688	811,516	25.93	2,541,172	81.18
1915	2,866,008	620,102	21.50	2,245,906	77.86
1911	2,305,059	496,230	11.52	1,808,828	67.52
1907	1,657,320	362,441	15.68	1,808,878	56.04
1903	1,223,101	290,096	13.90	933,004	44.71

[1] Not available for years 1931 to 1935.

MUNICIPAL BOND ISSUES

An improvement in the demand for municipal securities since 1933 is indicated by the adjoining table which shows the aggregate disposals of long-term obligations by States and municipalities for the first ten months of each year for a series of years.

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

The table showing municipal bond issues does not include the extension grants made to municipalities for public-works projects by the Federal

(000 omitted)

Year	Total First Ten Months	Year	Total First Ten Months
1937	$ 770,241	1925	$1,174,724
1936	873,264	1924	1,280,504
1935	968,737	1923	850,952
1934	728,531	1922	990,188
1933	392,580	1921	868,392
1932	701,938	1920	570,109
1931	1,156,129	1919	581,871
1930	1,211,857	1918	245,789
1929	1,055,135	1917	402,828
1928	1,094,074	1916	402,548
1927	1,297,029	1915	434,829
1926	1,149,105	1914	423,171

Source: *Commercial and Financial Chronicle*

Emergency Administration of Public Works. This agency was created by the National Industrial Recovery Act which became effective June 16, 1933. Under Title II of this Act, authority was granted to the Administrator to furnish grants, not subject to repayment, for 30 per cent of the total expenditures incurred for the payment of labor and material costs on approved public-works projects. Moreover, the agency was authorized to accept 4 per cent general obligation of revenue bonds of the municipalities as security for the loan portion of the allotment. In 1934 Congress authorized the Reconstruction Finance Corporation to purchase marketable securities from the Public Works Administration and provided that moneys realized by the Public Works Administration from such sales might be used for making additional loans, but not grants, in aid of non-Federal public works projects under Title II of the N.I.R.A.

In addition to the program of public works administered under Title II of the National Industrial Recovery Act, the Public Works Administration has been carrying on a separate program pursuant to the Emergency Relief Appropriation Act of 1935. Under the latter Act the amount of the grant has been fixed by administrative determination at 45 per cent of the cost of the project, with a corresponding reduction in the amount to be furnished by the applicant. Provision was made under this Act for the sale of bonds acquired as collateral for municipal loans either in the open market or to the Reconstruction Finance Corporation, the proceeds to be used only for the making of loans. In practice the sales have been confined to the Reconstruction Finance Corporation which, in turn, sells the securities in the open market. A substantial profit has been derived from this financing, but in recent months municipalities have found it advantageous to dispose of an increasingly large number of issues locally.

The Public Works Administration since its creation has pledged itself to buy approximately $100,000,000,000 worth of bonds. Because of recent large withdrawals, this commitment has been greatly reduced, and a much smaller amount has actually been delivered. The major portion of the amount acquired by the Public Works Administration has been placed with the Reconstruction Finance Corporation and re-sold to the general public.

TAX DELINQUENCY

Tax delinquency is a natural phenomenon of a business depression. And a rising trend to tax delinquency inevitably cripples municipal functions and weakens municipal credit. Dun and Bradstreet has made a study of the trend of median year-end tax delinquency in 150 cities of over 50,000 population for the seven-year period from 1930 to 1936. The following percentages show the median delinquency on the current tax levy at the end of each fiscal year:

1930	10.15%
1931	14.60%
1932	19.95%
1933	26.35%
1934	23.05%
1935	18.0%
1936	13.9%

These figures show a substantial gain in collections since 1933, but delinquency is still higher than it was in 1930. Only fragmentary data are available for 1937, but the trend is unmistakingly downward.

DEBT DEFAULTS

Heavy tax delinquency in recent years naturally resulted in a large number of defaults. The *Bond Buyer* estimated, with certain reservations, that 768 cities and towns were in default on their bonds on Oct. 1, 1937. This represented a slight reduction from the previous year when 779 incorporated places were in default.

The following States, according to the *Bond Buyer*, had the largest number of defaults:

Florida	155	Ohio	55
Texas	126	New Jersey	43
North Carolina	104	Oklahoma	34
Michigan	69	Minnesota	19

It is significant to note that Florida and North Carolina, which rank high

in the number of defaults, also had the largest increases in local indebtedness between 1912 and 1932, the percentages being 2,779.01 and 1,300.8 respectively. The indebtedness of Maine during the same period increased only 73.2 per cent, while that of Massachusetts increased only 99.2 per cent. Maine had one incorporated place in default in 1937 and Massachusetts had none.

While no data are available regarding the volume of municipal bonds in default, it can reasonably be stated that the volume of such defaults declined during the year.

DEBT ADJUSTMENT LEGISLATION

For the purpose of aiding municipalities which are in default on their obligations, various States have recently passed state receivership and debt adjustment acts. Boards or commissions have been established to supervise local indebtedness in general, to supervise the refunding of municipal bonds, and to act as receivers in event of failure to meet debt services.

A Federal Municipal Bankruptcy Act was enacted May 24, 1934. This Act, which was declared unconstitutional by the Supreme Court of the United States in May, 1936, was designed to enable any taxing district, with the consent of its creditors and the approval of a Federal District Court, to adjust its debt structure. According to the *Bond Buyer*, only 27 cities, one county, one school district, 41 irrigation districts, and one road district filed petitions under the Municipal Bankruptcy Act during the two years in which the law was in effect.

On Aug. 16, 1937, President Roosevelt signed a new Municipal Bankruptcy Act, designed to replace the original measure which was declared unconstitutional. The present law is similar in its provisions to the invalidated law. It provides a procedure whereby insolvent taxing agencies, such as local drainage, levee, irrigation, road, and sewer districts, as well as towns, boroughs, and municipalities, may effect compositions with their creditors. These compositions would be approvable only when the districts or agencies filed voluntary proceedings in bankruptcy accompanied by plans approved by 51 per cent of all the creditors of the district or town. The plan of composition cannot be confirmed unless accepted in writing by creditors holding at least 66⅔ per cent of the aggregate amount of the indebtedness of the petitioning district or taxing agency, unless the judge is satisfied that the taxing district was authorized by law to carry out the plan and there had been a finding by the court that the plan was fair, equitable and for the best interest of the creditors. The jurisdiction conferred by the Act terminates June 30, 1940.

INCOME TAXES

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FEDERAL INCOME TAX

No major changes were made in the Federal income tax structure in 1937. The brief Revenue Act of 1937 (H.R. 8234) was designated as an act "to provide revenue, equalize taxation, prevent tax evasion and avoidance, and for other purposes." It is primarily concerned with the prevention of tax evasion and avoidance. An additional surtax of 65 per cent on the first $2,000 and 75 per cent of amounts in excess of $2,000 is levied

upon the undistributed adjusted net income of every personal holding company. American shareholders in foreign personal holding companies are required to include in their gross income the undistributed dividends of such foreign holding companies. The act enumerates certain disallowed deductions in computing net income, amends the Revenue Act of 1936 in respect to its treatment of trusts and of non-resident alien individuals.

Revenues from both personal and corporate income taxes increased in the fiscal year ended June 30, 1937. Corporate income tax collections were 43 per cent greater and personal income tax collections 62 per cent greater than in the preceding fiscal year. Total income tax collections exceeded those of each of the last six fiscal years and were only 11 per cent below those of 1930. The proportion of all Federal taxes from these sources increased from 36.2 per cent in 1936 to 41.8 per cent in 1937. Comparisons for the past three years are as follows:

FEDERAL INCOME TAX COLLECTIONS

(In thousands of dollars)

Fiscal Year	Corporation Tax	Personal Tax	Total Tax	Per Cent of all Federal Taxes from Income Tax
1936–37	1,056,923	1,091,741	2,148,664	41.8
1935–36	738,522	674,416	1,412,938	36.2
1934–35	572,118	527,113	1,099,231	30.2

CHANGES IN STATE INCOME TAXES

Colorado and Maryland adopted income tax laws in 1937. The Colorado tax on personal incomes provides for rates graduated from one to 6 per cent with an additional surtax of 2 per cent "without exemption or deduction for any cause" on income from intangibles. The Colorado corporate income tax levies a flat rate of 4 per cent and a rate of 6 per cent on banks. The Maryland act levies a flat rate of one half of one per cent on both individual and corporate incomes. This act specifies that it is to apply only to 1937 and 1938 incomes. The Maryland legislature voted to submit to the voters at the November, 1938 election an amendment to the state constitution permiting "classified, graduated, and progressive" income taxes. The California Corporation Income Tax Act of 1937 supplements the Bank and Corporation Franchise Tax Act of 1929 by extending its provisions to foreign corporations and holding companies. In Georgia the personal income tax rate has been changed from a graduation of one to 5 per cent to one to 7 per cent, and the flat corporate rate has been raised from 4 per cent to 5½ per cent. The Minnesota personal graduated rates have been raised from the previous maximum of 5 per cent to a maximum of 10 per cent. A flat tax —7 per cent for 1937 and 1938 and 6 per cent thereafter—has been substituted for the former graduated Minnesota corporate income tax. The maximum rate of the North Carolina personal income tax has been raised from 6 to 7 per cent. Several States have made changes in personal exemptions.

DIGEST OF STATE PERSONAL INCOME TAX PROVISIONS

State	Year First Effective	Personal Exemption			Rate of Tax (per cent)	Amount of Taxable Income in Excess of which Maximum Rate Applies
		Single	Head of Family	Dependents		
Alabama	1933	$1,500	$3,000	$300	1½–5	$5,000
Arizona	1933	10[a]	20[a]	4[a]	1–4½	10,000
Arkansas	1929	1,500	2,500	400	1–5	25,000
California	1935	1,000	2,500	400	1–15	250,000
Colorado	1937	1,000	2,500	400	1–6[b]	10,000
Delaware	1917	1,000	2,000	200	1–3	10,000
Georgia	1929	1,000	2,500	400	1–7	20,000
Idaho	1931	700	1,500	200	1½–8	5,000
Iowa	1934	10[a]	20[a]	5[a]	1–5	4,000
Kansas	1933	750	1,500	200	1–4	7,000
Kentucky	1936	1,000	2,500	400	2–5	5,000
Louisiana	1934	1,000	2,500	400	2–6	50,000
Maryland	1937	1,000	2,500	400	0.5[c]	
Massachusetts	1916	2,000[d]	2,500[d]	250[d]	1½–6[e]	
Minnesota	1933	10[a]	30[a]	5[a]	1–10	20,000
Mississippi	1912	750	1,500	200	2½–6	15,000
Missouri	1917	1,000	2,000	200	1–4	9,000
Montana	1933	1,000	2,000	300	1–4	6,000
New Hampshire	1923	200	200		[f]	
New Mexico	1933	1,500	2,500	200	1–4	100,000
New York	1919	1,000	2,500	400	2–7[g]	9,000
North Carolina	1921	1,000	2,000	200	3–7	10,000
North Dakota	1919	500	1,500	200	1–15	15,000
Ohio	1931				5[h]	
Oklahoma	1908	850	1,700	300	1–9	8,000
Oregon	1930	800	1,500	300	2–7[i]	5,000
South Carolina	1922	1,000	1,800	200	2–5[j]	6,000
South Dakota	1935	6[a]	12[a]	2[a]	1–8	318,000
Tennessee	1929				4–6[k]	
Utah	1931	600	1,200	300	1–5	4,000
Vermont	1931	1,000	2,000	250	2–4[l]	
Virginia	1843	1,000	2,000	200	1½–3	5,000
West Virginia	1935	600	1,300	200	1–3	6,000
Wisconsin	1911	8[a]	17.50[a]		1–7	12,000

a Deduction from tax. *b* Additional 2% surtax without exemption on income from securities. *c* To apply to 1937 and 1938 incomes only. *d* Exemptions apply to earned income. *e* Earned income and annuities 1½%; capital gains 3%; interest and dividends 6%. *f* Average rate on real estate; applies only to income from dividends and interest. *g* Plus 1% on gross income less personal exemptions. *h* Applies only to income from intangibles. *i* Exemptions and rates do not apply to income from intangibles; this is taxed at 8% with exemptions of $500 for single persons and $800 for heads of families. *j* For income from interest and dividends, 3 to 5% on all over $200. *k* On dividends and interest only: 4% on dividends when at least 75% of corporate property assessable in Tennessee, 6% on other dividends and on interest. *l* 2% on earned income; 4% on interest and dividends.

DIGEST OF STATE CORPORATION INCOME TAX PROVISIONS

State	Year First Effective	Kinds of Corporations Exempt	Amount of Income Exempt (dollars)	Rate of Tax (per cent)
Alabama	1933			3[a]
Arizona	1933	Insurance		1–5[b]
Arkansas	1929	Foreign insurance	1500	2
California	1929			4[c]
Colorado	1937	Insurance		4[d]
Connecticut	1915	Public utilities, insurance		2
Georgia	1930	Insurance, banks		5½
Idaho	1931	National banks		1½–8[e]
Iowa	1934	Insurance, banks		2
Kansas	1933	Banking		2
Kentucky	1936	Banks, insurance		4
Louisiana	1934			4
Maryland	1937	Banks		0.5
Massachusetts	1919	Public utilities, insurance		2½[f]
Minnesota	1933	Banks, mines	1000	7[g]
Mississippi	1914	Banks	750	2½–6[h]
Missouri	1917	Express, insurance, banks		2
Montana	1917			3[i]
New Mexico	1933	Express, insurance	1000	2
New York	1917	Real estate, public utilities, insurance		6[j]
North Carolina	1921			6
North Dakota	1919	Insurance, national banks		3–6[k]
Ohio	1931			5[k]
Oklahoma	1931			6
Oregon	1930	Insurance		8[o]
Pennsylvania	1935	Insurance, banks		7
South Carolina	1922			4½
South Dakota	1935	Express, mining		1–8[l]
Tennessee	1931			3[m]
Utah	1931			3[n]
Vermont	1931	Public utilities, insurance, banks		2
Virginia	1927	Public utilities, insurance, banks		3
Wisconsin	1911	Railroads, car, insurance, savings banks		2–6[b]

a. Banks taxed by an "excise tax measured by net income" at 6%. *b* Maximum rate applies to all income over $6,000. *c* 1937 Corporation Income Tax applies to income of foreign corporations and holding companies, supplements old Bank and Corporation Franchise Tax. *d* Banks at 6%. *e* Maximum rate applies to all income over $5,000. *f* Bank rate to be determined by Commissioners; not to exceed highest rate applied to business corporations. *g* Rate is to be 6% after 1938. *h* Maximum rate applies to all income over $15,000. *i* Minimum tax of $5.00. *j* Regular rate is 4½%, emergency 6% rate applies to years beginning Nov. 1, 1936, 1937, and 1938. *k* On income from intangibles. *l* Maximum rate applies to all income over $318,000. *m* Interest and dividends taxed as under personal income tax. *n* Or 1/20 of 1 per cent of value of tangible property, whichever is greater, less property tax offset up to one-third of tax. *o* Offset for personal property tax up to 90% of excise.

STATUS OF STATE INCOME TAXES

The present status of state income taxes is as follows: 31 States are taxing both personal and corporate income, but two of these—Ohio and Tennessee—tax income from intangibles only. Delaware, New Hampshire and West Virginia tax personal income only. The New Hampshire tax is on income from intangibles only. A proposal for a more inclusive tax was defeated in the 1937 legislature. Connecticut and Pennsylvania tax only corporate income. Altogether 36 States levy some form of net income tax.

Twenty-seven States tax corporations as flat rates ranging from one half of one per cent to 7 per cent (not including Oregon because of the property tax offset). Six States apply graduated rates to corporate incomes, of these the highest rate is 8 per cent. New York state levies a tax of 4 per cent on the income of unincorporated businesses.

PRODUCTIVITY AND USE OF STATE INCOME TAXES

The productivity of state income taxes varies greatly among the separate States. In Massachusetts and New York over 30 per cent of state collected revenues were derived from income taxes. In no other States did income tax collections amount to as much as 20 per cent of total state collected revenues. In ten States less than five per cent of state collected revenues were derived from income taxes. Thirteen States—slightly more than one third of the income tax employing States—collected over ten per cent of state revenue collections by means of income taxes. Since there is wide variation in accounting methods and in forms of reporting revenue collections among the States these percentages must be regarded as approximations with unfortunately wide margins of error. The differences in income tax yields among the States cannot be attributed to any single factor.

The rates, exemptions, number and size of brackets and efficiency of administration vary widely among the States. All of the States do not make separate reports of personal and corporate income tax collections. For those which do so report the total collections of personal income taxes are somewhat greater than of corporate income taxes. This is due to a considerable extent to the importance of personal income taxation in Massachusetts and New York. In many States corporate income tax collections exceed personal income tax collections.

Less than one third of the income tax States share their income tax collections directly with local governments. In several States, however, a large proportion of income tax collections are spent directly by state governments for schools, thus materially aiding local governments. In some of the States income tax collections have been used for unemployment relief.

REVENUE FROM STATE INCOME TAXES

State	Income Tax Collections (in thousands of dollars)			Income Tax Revenues Returned to Local Governments (thousands of dollars)	Per cent of Total State Collected Revenues [a] Derived from Income Taxes	Year Ending
	Personal	Corporate	Total			
Alabama			2,010	0	4	Sept. 30, 1937
Arizona			1,164	0	8[b]	June 30, 1937
Arkansas	332	295	627	0	3	June 30, 1937
California	16,256	17,394	33,650	0	15	June 30, 1937
Colorado [c]						
Connecticut	0	3,486	3,486	0	9	June 30, 1937
Delaware	918	0	918	0	19	Oct. 31, 1936
Georgia	964	1,569	2,533	0	12	Dec. 31, 1936
Idaho	682	1,194	1,876	0	11[d]	Jan. 3, 1938
Iowa	3,250	494	3,744	0	4	June 30, 1937
Kansas	1,470	756	2,226	0	7	June 30, 1937
Kentucky	1,808	1,827	3,635[e]	0	8	June 30, 1937
Louisiana			2,798	0	6[b]	Dec. 31, 1936
Maryland [c]						
Massachusetts	24,517	2,787[f]	27,304[f]	18,013	33	Nov. 30, 1937
Minnesota	——[g]	——[g]	5,568	4,062	4	June 30, 1937
Mississippi			939	0	3	Dec. 31, 1936
Missouri			5,528	0	18	Dec. 31, 1936
Montana	486	586	1,072	389	8[b]	June 30, 1937
New Hampshire	483	0	483	473	2	June 30, 1937
New Mexico			268	0	1	June 30, 1937
New York	121,260	30,901	152,161	16,216	38	June 30, 1937
North Carolina	2,668	8,307	10,975	0	16	June 30, 1937
North Dakota	307	189	496	0	2	June 30, 1937
Ohio			5,866	5,632	3	Dec. 31, 1936
Oklahoma			6,286	1,872	11	June 30, 1937
Oregon	2,169	1,134	3,303	0	14	Dec. 31, 1936
Pennsylvania	0	29,880	29,880	0	13[b]	May 31, 1937
South Carolina			2,175	0	9[b]	June 30, 1936
South Dakota			469	156	2[b]	June 30, 1937
Tennessee			1,540	386	5[b]	June 30, 1937
Utah	805	750	1,555	0	15	June 30, 1937
Vermont			698	300	5	June 30, 1937
Virginia	1,351	2,434	3,785	0	5	June 30, 1937
West Virginia	1,677	0	1,677	0	5	June 30, 1937
Wisconsin			13,049	7,700[h]	13	June 30, 1937

a It is impossible to obtain completely consistent, up-to-date figures from all the states showing total state collected revenues. Therefore, the per cents in this column have been computed on varying bases and must not be regarded as giving perfectly accurate indications of the importance of income tax collections to the separate states. *b* Per cent of tax collections only—as presented in Tax Policy League, *Tax Policy*, November–December, 1937. *c* Enacted in 1937. *d* Last three months of revenue collections estimated. *e* Tax effective for only part of fiscal year. *f* Corporate income tax is not collected separately from other corporate taxes—figure used for corporate income tax collections is estimate of amount of 1936 corporate tax collections derived from income. *g* $2,686,492 of personal income tax and $3,590,185 of corporate income tax were assessed. *h* Approximate.

LAND AND PROPERTY TAXES

By Jens P. Jensen

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COMMISSIONS OF INQUIRY

The New York commission for the revision of the tax laws was continued for another year (Ch. 194). Massachusetts provided for a special commission on taxation and public expenditures (Ch. 58). A North Carolina commission was created to study classification and exemption of property from taxation as provided by recent constitutional amendments (H.B. 115). In New Mexico the regular administrative tax commission was directed to investigate the valuation of telephone and telegraph companies (S.J. R. 13). Pennsylvania provided for a joint legislative committee to study the effects of tax burdens on industries (S.R. 4). In Rhode Island a commission was to report by Nov. 1, 1937 (H.B. 590).

ASSESSMENT

Central Administration.—The Oklahoma tax commission was reduced in size from three members to one (H.B. 498), and authorized to equalize and adjust the 4% gross receipts tax on car companies with an *ad valorem* tax (H.B. 471). Massachusetts substituted five-member Appellate Tax Board for its former three-member Board of Tax Appeals (Ch. 400). Arkansas created a tax supervision department in the state government (H.B. 244), and established a division of road taxes (S.B. 14). In a number of States the functions and authority of the administrative tax commission were defined and extended, namely, Connecticut (S.B. 498, H.B. 1519); Illinois (H.B. 408); Iowa (S.F. 160); New Jersey (A.B. 468); New York (S.B. 863); North Dakota (H.B. 16, 140, 141, 304); Utah (S.B. 76); Washington (S.B. 239); Wisconsin (S.B. 441). In California a constitutional amendment proposed would modify the state and county board of equalization (Ch. 99). The Texas State Tax Board was upheld in its method of assessing pipe line property (100 S.W. 2d 754).

Assessment Requirement.—Florida required goods, wares, and merchandise, known as stock in trade to be assessed on the average value during the preceding 12 months (S.B. 25). A similar arrangement was extended in Utah to merchandise shipped in from other States (H.B. 70). A Pennsylvania law (Act 112) set up a new system of assessment and records in counties of the first class. This innovation was upheld against attack (193 A. 645). For some reason an act (No. 256) designed to effect similar results in the counties of the third class was held void as in violation of home rule rights (193 A. 628). Illinois provided for the adjudication of tax objections by the county court, before extension of taxes, in municipal corporations of 500,000 or more (H.B. 734). Idaho provided that mineral rights reserved to grantor shall be assessed at five dollars per acre (H.B. 33). In Washington the date of assessment was changed to Jan. 1 (S.B. 240). More or less important modifications of the assessment were made in Alabama (H.B. 298); California (Ch. 144, 159, 176, 209, 475, 591, 837, 850); Connecticut (H.B. 509, S.B. 631, H.B. 720, H.B. No. 903); Maryland (Ch. 488); Massachusetts (Ch. 114); Michigan (P.A. 22); Minnesota (Ch. 365); Missouri (H.B. 52, 125, S.B. 93); Montana (H.J.R. 1, H.B. 131); New Hampshire (H.B. 75); New Mexico (S.B. 28, 218); New York (Ch. 226, 299); North Carolina (H. B. 345); North Dakota (H.B. 18, S.B. 89, H.B. 118); Oklahoma (S.B. 285); Oregon (S.B. 225); South Dakota (H.B. No. 165); Texas (H.B. 105, S.B. 282); West Virginia (S.B. 128); Wyoming, (Ch. 77). Rulings on matters of assessment procedure and rights were rendered in numerous cases.

PROPERTY CLASSIFICATION

The Georgia electorate put the final approval upon a constitutional amendment to classify tangible and intangible property for differential taxation (H.B. 34). North Carolina classified intangible property for exclusive state taxation (H.B. 35) and created a Classification Amendment Commission to assist the legislature in levying taxes (H.B. 115). The Ohio statute of 1931 authorizing the tax commission to issue certificates of tax immunity against collection of back taxes for the years 1926–30, as a motivating measure under the low-rate intangibles tax, was held discriminatory against non-delinquents, and therefore unconstitutional, in an action to collect a debt due to the State (9 N.E. 2d 676).

The Minnesota general classification was further elaborated by provision for low-grade ore to be designated as class 1a, for which the valuation may be based on tonnage recovery (H.B. 623). Minor changes were made in the taxation of intangibles in Connecticut (Ch. 269), Indiana (H.B. 36), Minnesota (Ch. 5), Montana (S.B. 86), and Texas (H. B. 8). The Kentucky statute taxing deposits in Kentucky banks at the rate of 10¢ per $100 as against a rate of 50¢ on deposits in foreign banks was upheld (97 S.W. 2d 561). The Ohio statute exempting property of interurban railroads, except real property, was upheld (9 N.E. 2d 684). Rulings in classification and the taxation of intangibles were made in several cases.

TAX LIMITATION

Levies.—The tax limitation movement was not much in evidence. A Constitutional amendment in Utah would change the rate of taxation, and the purposes and distribution of funds (H.J.R. 4). In Kansas, incidental to a school equalization program financed by the sales tax revenue, the county school levies were reduced to one and a half mills for a school aid fund (S.B. 125); and a limit of six mills was placed on municipal high school districts (H. B. 139). Nebraska reduced the annual levy for general purposes from 15 to five mills in cities between 5,000 and 25,000 population (L.B. 123). Utah required a reduction in the county road levy (H.B. 33). Idaho fixed maximum levies in counties of less than $5,000,000 valuation at 10 mills (S.B. 83), and fixed a minimum levy for the County Noxious Weed Eradication Fund (H.B. 258). Michigan set the maximum port district levy at two mills (P.A. 49). Nebraska limited the aggregate levy in certain school districts (L.B. 314). So also did Utah (H.B. 149). Indiana limited rural levies to 10 mills and urban to 15 mills, but permits special levies for named purposes (H.B. 287). Rulings on the power to levy were had (187 A. 703; 6 N.E. 2d 710; 10 N.E. 2d 337; 69 P. 2d 638).

Mandatory.—More numerous were the mandatory new or increased levies, or such levies authorized for named purposes. Thus Pennsylvania re-enacted the state personal property tax at the rate of eight mills for two years, the State to collect all and return half to the counties (H. B. 1043). In Oregon it was provided that the levy for higher education shall not be less than the amount of the levy in 1930, to which is added $400,000 out of the state general fund (H.B. 441). Indiana established a state levy of two mills a year for seven years for a state park at Hammond (H.B. 411). Mandatory levies were also approved in Nebraska (L. B. 172, 246); North Dakota (H.B. 156); and South Dakota (H.B. 250).

State and General.—The authorized levies are not all new, nor are they all increases of old levies. State tax levies were modified in Idaho (H.B. 447); Montana (H.B. 352); and Nevada (S.B. 135, S.B. 71). Iowa authorized an additional levy, not exceeding $40,000, in cities of 75,000 to 90,000 (S.B. 10) and amended the law relating to the power of cities to levy special taxes (H.F. 52).

Educational.—The most common purpose requiring levy sanctions was education. Kansas provided a two-mill levy for municipal universities (H.B. 275); and also an additional levy for deficiency in the high school

fund (S.B. 46). Idaho provided a levy for state school building bonds (H.B. 456); and authorized a general levy for school purposes (H.B. 188). Minnesota amended the school tax in Duluth (Ch. 85). Mississippi authorized a general county levy for schools (S.B. 5). Nevada provided for a high school levy (A.B. 302). And Illinois fixed the municipal library levy (S.B. 251).

Social Security.—Levies for poor relief and kindred purposes required frequent sanction. Some provision for poor relief was authorized in Illinois (H.B. 73, 85, 86); in Kansas (H.B. 597); and Nebraska (L.B. 143). Maryland provided for a levy for the unemployed for two years, in Baltimore county (H.B. 342); Montana authorized county levies for old-age assistance (H.B. 152); and South Dakota approved a levy for municipal employees' pension (H.B. 20) and for dependent children (S.B. 249). In Illinois two railroads successfully protested a levy for the blind (8 N.E. 2d 655).

Health and Sanitation.—Sanitation and public health were authorized increased levies. Idaho provided for additional levy for county hospital maintenance (S.B. 36) and for interest and principal of state hospital bonds (H.B. 455). Illinois fixed the municipal tuberculosis levy (S.B. 252), and trebled the rate for sanitary and sewage district purposes (H.B. 1057). In Indiana the limit for the Indianapolis Sanitary District was raised (S.B. 138), and levies authorized for city health departments and for tuberculosis purposes (H.B. 79). The Nevada hospital maintenance levy was increased.

Roads and Parks.—Public improvements of various sorts were accorded increased levies. Idaho provided for an increased levy to acquire main highways (H.B. 65). Minnesota authorized a levy for roads in unorganized territory (Ch. 395). New Mexico amended the levy for street maintenance (S.B. 156). California authorized levies for regional park districts (Ch. 539). Illinois pegged the levy of the Chicago Park District to raise $9,000,000 for three years (S.B. 35), and increased the levies in other political divisions (S.B. 429, H.B. 855). So also did Montana (H.B. 119). California authorized a levy to create a capital outlay fund (Ch. 717). Idaho provided for flood control districts and assessments in their support (H.B. 400). Irrigation district assessments were authorized in North Dakota (H.B. 52). Ohio allows the court to authorize levies for conservancy districts that may be formed (S.B. 69). Airports were authorized and allowed levies in Idaho (H.B. 333), and North Dakota (S.B. 101). Montana permits levy for the maintenance of its policy reserves (H.B. 78). Iowa and North Carolina authorize levies for agricultural lime (H.F. 147; H.B. 875). Idaho authorized levy of not to exceed 10 mills to fight predatory animals (H.B. 208). Indiana permitted levies by cities to advertise their memorials (S.B. 255), and Florida a tax of 5¢ per box of tangerines to advertise this fruit (S.B. 42). The Illinois Supreme Court determined the levying power of the Chicago Park District (9 N.E. 2d 243).

Protection.—Police protection is the purpose of an authorized levy in Montana for police reserves (H.B. 27). In California fire protection districts may levy to clean up property (Ch. 30). In Nebraska a small levy is permitted to a rural fire fighting district for apparatus (L.B. 244).

Minor and Miscellaneous.—The deficits due to delinquency and otherwise also result in additional levies. Pennsylvania has facilitated debt payment by excluding from the county 10-mill limitation levies for the debt service (Act 258), and authorized cities to provide in next year's levy for 1937 deficits (Act 401). Iowa has authorized levies to pay amounts due by cities to electric light funds (H.F. 314). Nebraska has created a county tax sinking fund (L.B. 231). In Iowa the claim of a special assessment district to levy supplementary assessments was upheld (272 N.W. 55).

Situs.—An enterprising Los Angeles jeweler shipped half of his stock to Honolulu for about three weeks

from Feb 22 in order to establish there a taxable situs as of March 1. The California Supreme Court. reversing the lower court, held that the jewelry was not located elsewhere long enough to become part of wealth anywhere other than at Los Angeles (65 P. 2d 791). According to a New Jersey decision, securities held in New York City by a corporation domiciled in New Jersey may have a taxable situs in New Jersey, even though a business situs might be established in New York (193 A. 912, 915). Points of situs were raised and ruled on (9 N.E. 2d 58; 187 S.E. 551; 190 S.E. 546; 62 P. 2d 48).

EXEMPTION

Homestead.—Homestead exemption holds the center of the stage in property taxation. Florida submitted a proposed constitutional amendment modifying the present exemption arrangement (S.J.R. 21), and determined the liability of homesteads to taxes for debts prior to constitutional amendment (175 So. 772). In Georgia a constitutional amendment would exempt up to $2,000 with legislative discretion to lower the amount to $1,250 (H.B. 26). A similar amendment in Rhode Island put the upper limit at $3,000 (H.B. 522). An Alabama statute exempted homesteads up to $2,000 (S.B. 5). Iowa set up a homestead credit fund and allowed credit on homesteads up to $2,500 in value (S.F. 184). Minnesota provided for assessment of homesteads in odd-numbered years for properties becoming homesteads (Ch. 206). Oklahoma legislation set the exempt amount at $1,000 (H.B. 3). Arkansas legislation determined the exemption (H.B. 385). South Dakota exempts homesteads from the state tax (H.B. 230). A proposed constitutional amendment in Georgia would exempt property to the extent of $300 (H.B. 30). A statute in Wyoming exempts property assessed to the value of $1,500 (Ch. 140).

Public Property and Bonds.—New Mexico memorialized Congress to be permitted to tax Federal lands acquired from private owners in the State. Various classes of named public property were exempted in Alabama (H.B. 177); Massachusetts (Ch. 364); Montana (S.B. 55); Tennessee (S.B. 498). Tennessee also exempted the bonds of housing authorities (S.B. No. 504); and Virginia restricted the exemption of municipal bonds (S.B. 2). Personal property on the Fort Peck, Mont. dam site, being exclusively under Federal jurisdiction, is not subject to state or local taxation (69 P. 2d 97). The Indiana statute making publicly owned utilities taxable was sustained (N.E. 2d 184). Under the Virginia statute a city water system not operated for profit is exempt (192 S.E. 588). The New Jersey statute making certain state-owned lands taxable is void for want of reasonable classification (193 A. 555). In Kansas a city-owned electric plant is exempt even though parts of its property extend into another county (61 P. 2d 897). Various points of exemption of public property were ruled upon.

Charitable and Religious.—These are not days of increasing exemptions for charity and religion. Texas exempted certain charitable associations (S.B. 13). Florida exempted property of charitable institutions actually used by them if not more than 50% of the floor space is rented and rents used for the institutional purposes (S.B. 352). In four separate acts Indiana placed restrictions upon exemptions: property hitherto exempt is made taxable if (1) it is used to bring profit to the owners (H.B. 72); (2) it is not actually used for charitable or religious purposes; (3) in case of property donated, the institution has agreed to pay the donor an income for life (H.B. 348); and (4) unless owner has filed application with description and reasons for claim (H.B. 347). California legislation similarly requires veterans and churches to file claims for exemptions (Ch. 693). Iowa suspended payment of taxes by recipients of old age pension (H.F. 496). Carolina held property of a religious and charitable foreign corporation taxable, although for religious use (187 S.E. 795). Numerous but minor points were decided.

Veterans.—The trend toward vet-

erans' exemption ought to have turned. Alabama provided for the exemption of property of "incompetent" veterans (H.B. 80). In Maine the exemption to soldiers was increased (H.B. 1873). Oregon allows to pensioned widows and Civil War veterans an additional homestead exemption of $500.

Educational.—There was no legislation materially affecting the exemption of property used for educational purposes. In Kansas the supreme court finally decided that the property of a business college was not exempt, being used for profit (64 P. 2d 63). In Tennessee the property of a University club is not exempt (106 S.W. 2d 861). In Pennsylvania securities left by the Frick estate to Princeton University, but in the keeping of a trust company in Pittsburgh, are not subject to the state four-mill tax (191 A. 658). In Illinois real estate held by trustees of schools, not used for school purposes but the revenue derived so used, was not exempt as being devoted to educational uses (4 N.E. 2d 16).

Commercial.—Of all purposes for which exemptions were granted or extended the most numerous were those intended to subsidize some economic activity accepted rightly or wrongly as socially advantageous. New York extended the authority of municipalities to exempt buildings erected for slum clearance (Ch. 207). This is the year in which it was the turn of beet sugar factories in Wyoming to be declared exempt (Ch. 51). Exemptions of more or less minor scope were granted in Alabama to manufactured articles (H.B. 283); Colorado, water reservoirs (S.B. 255); Delaware, motion picture studio property (H.B. 268); Mississippi, a number of named enterprises (S.B. 1, H.B. 18, 19); North Dakota, plantings of trees and hedges (H.B. 292); South Carolina, manufacturing in named counties (S.B. 722); and Washington, grains, fish, and fish products stored in the State for outside shipment (S.B. 388).

Miscellaneous and Minor.—On miscellaneous and minor exemption matters there was legislation in several States, namely Arkansas (S.B. 43); Connecticut (Ch. 191, H.B. 896, 1740); Idaho (H.B. 257); Maine (H.B. 1872); Maryland (H.B. 463); Massachusetts (Ch. 132); Michigan (P.A. 17); Ohio (S.B. 65); South Carolina (S.B. 648); Wisconsin (Ch. 129, S.B. 472). A Florida decision holds that tax certificates are mere statutory liens and are not taxable property (171 So. 798). In Michigan contrary to the holdings in some other States, abstract books are not taxable property, having no intrinsic value (272 N.W. 437). A case of the now rare contractual exemption arose in Missouri where Washington University claimed and was upheld in its tax exemption under its original charter granted by the legislature in 1852–3 (108 S.W. 2d 403).

TAX COLLECTION

Refunds.—Legislation to facilitate refunds of taxes illegally or erroneously collected was adopted in Maryland (Ch. 469); Montana (H.B. 317); Oklahoma (H.B. 607); Pennsylvania (Act 212, H.B. 1265). Minor points were raised (194 A. 191, 65 P. 813).

Installment Payment.—One favored method of inducing payment is to permit payment in installments over a period of years. The usual practice is then to abate, cancel, or waive a part or all of the interest, penalties, and even to allow a discount, if the installments begin before a specified date and are made promptly thereafter as stipulated. Such laws were enacted in Idaho (S.B. 84 and H.B. 142); Indiana (H.B. 57); Iowa (H.F. 119, S.F 167); Michigan (P.A. 28); New York (Ch. 662); North Dakota (H.B. 59); Ohio (S.B. 474); Pennsylvania (Act 83 and H.B. 1303); South Dakota (S.B. 1); Texas (H.B. 456). Issues arising out of such acts were presented (194 A. 515, 65 P. 2d 434; 70 P. 2d 301, 937).

Waiver of Interest and Penalties.—The most popular bait to induce delinquent taxpayers to pay up is to waive or cancel a part or all of the penalties, interest or other cost of

delinquency, provided the delinquent taxes be paid before a stipulated date. All such legislation is of course of an emergency character. Such measures were passed in Arizona (H.B. 11); California (Ch. 299); Connecticut (S.B. 1172); Florida (H.B. 20, 551); Massachusetts (Ch. 203); Michigan (S.B. 286); Minnesota (Ch. 1); Missouri (H.B. 70); Montana (S.B. 1); New Mexico (H.B. 18); North Dakota (H.B. 359); Ohio (H.B. 134, 503); Oklahoma (H.B. 96, S.B. 8, 146, 274); Oregon (H.B. 142); Pennsylvania (Acts 83, 84, 234); Tennessee (H.B. 1); Wisconsin (A.B. 72, 142); Wyoming (Ch. 70). Apparently permanent legislation relative to penalties, interest, discounts and other costs was adopted in Montana (S.B. 44, 45); New York (Ch. 121, 258); North Dakota (S.B. 248); Pennsylvania (Act 581); Utah (H.B. 71); Washington (H.B. 499).

Compromise.—Authority was given in Arizona to compromise special districts when the property was not worth the taxes (S.B. 9); so also in California (Ch. 212). South Dakota permitted the compromising of special assessments in cities (S.B. 142) and settlement of delinquent taxes was authorized in Tennessee counties of less than 3,700 population (Ch. 381).

Abatement.—It is uncommon for legislatures to cancel delinquent taxes. They probably seldom have the authority to do so. However, New Mexico cancelled tax lien certificates for 1930 and prior years (H.B. 97). Abatements were involved in the legislation of Connecticut (Ch. 1921), Massachusetts (Ch. 135), and Wisconsin (Ch. 172).

Salary Deductions.—Pennsylvania authorized the deduction of salaries of public officials to cover delinquent taxes, with interest, penalties, and costs, in cities of the first class (Acts 4, 63). A similar act was adopted in North Dakota (S.B. 252), and that State provided for the collections of taxes through the collection of rents (H.B. 259).

Protest.—Florida (S.B. 515), Illinois (H.B. 91), and South Carolina (H.B. 414) accorded or extended the right to protest taxes improperly levied. Minnesota, in stating this right, required all taxes to be paid before the petition (Ch. 483).

Validating Action.—The legislatures found it necessary to validate appropriations, levies, assessments, sales, deeds which suffered or were suspected of suffering from procedural defects, in Illinois (H.B. 359), Indiana (H.B. 339), Montana (H.B. 96, S.B. 133), New Jersey (Ch. 12), New York (Ch. 260), North Carolina (H.B. 49, 90), Pennsylvania (H.B. 1113), and Texas (S.B. 3, 107).

Tax Sale Procedure.—Among the steps toward the enforcement of delinquent tax claims are the publication of a delinquent list, and other details of the sale of the tax certificates, some of which received much attention in California (Ch. 204, 402), Florida (H.B. 396), Indiana (H.B. 33), Michigan (H.B. 318), Montana (S.B. 93), North Carolina (S.B. 125), North Dakota (H.B. 185), Oklahoma (H.B. 478), Oregon (H.B. 202), Pennsylvania (Acts 36, 75), Tennessee (Ch. 206), and Washington (S.B. 106).

Sale of Lands Taken for Taxes.—The problem of disposing finally of the lands deeded to the county or the State for unpaid taxes remains perplexing. Oregon authorized the counties to hold such lands indefinitely (H.B. 210, 309). Provision for final disposal of such property by sale was made in Delaware (H.B. 139), Maryland (Ch. 245, 248), Minnesota (Ch. 272), Montana (H.B. 218), Nebraska (L.B. 71), New Mexico (Ch. 215), North Carolina (H.B. 1230), and Oregon (H.B. 284).

Liens.—California provided that tax liens on real and personal property shall cease after 30 years (Ch. 344). Pennsylvania, in contrast, extended the lien period for taxes on seated lands for 1934 and prior years to five years (Act 559). Minor provisions relative to tax liens were made in Kansas (S.B. 139), Montana (S.B. No. 84), North Dakota (S.B. No. 84), and Pennsylvania (Acts 245, 272). Questions of the priority of the lien arose.

Redemption.—Facilitating the collection of delinquent taxes without

jeopardizing the rights of redemptors from final sale was the motive for legislation in Alabama (H.B. 529), California (Ch. 56, 213, 348, 571), Florida (H.B. 2045), Idaho (H.B. 114), Montana (H.B. 97), and South Dakota (S.B. 256). Redemptors' rights were issues in numerous suits.

Collectors.—Pennsylvania made certain changes in the collection machinery. Recorders and treasurers in counties of the first class will no longer be paid in fees for fees and taxes collected for the State, the fees hereafter going to the respective treasuries (Acts 61, 62). In the cities there is substituted the Department of the City Treasurer for the Department of Receiver of Taxes (Act 110). Minor changes affecting the collector's office were made in California (Ch. 884), Massachusetts (H.B. 463), Missouri (S.B. 160), and Pennsylvania (Act 335). As usual the Southern fee system of compensating collectors forced a number of disputes to the supreme courts.

CORPORATION AND BANK TAXES

By Jens P. Jensen

Professor, University of Kansas

GENERAL

The Federal Revenue Act of 1937 had little to do with the taxation of corporations, other than to "stop gaps." The litigation of corporation tax matters was chiefly concerned with technical matters having to do with the measurement and determination of taxable income. Despite the vigorous opposition to the undistributed profits tax no material change was made in it during the year. Some change, however, is likely to come about in 1938. The 1937 events in corporation taxation, therefore, relate mostly to the States.

STATE CORPORATE INCOME TAXATION

Constitutional amendments that would permit individual and corporate income taxes were adopted in Maryland (Ch. 525) and Pennsylvania (H.B. 1). A similar measure is pending in Tennessee. Two new corporate income taxes were adopted: the Colorado tax rate is 4% on corporate income, and there is a tax of 2% on net income from securities without exemptions (H.B. 148); the Maryland tax is at the rate of ½ of 1% on 1937 and 1938 incomes (Ch. 11). California extended the corporate 4% income tax to the net income of corporations which were not subject to the Bank and Corporation Tax Act (Ch. 765). Massachusetts provided for a temporary surtax equal to 10% of the corporate excise tax (Ch. 422). Montana increased the corporation license tax from 2% to 3% (H.B. 80). New York continued the franchise tax rate at 6% (Ch. 183) and the 4% unincorporated business tax (Ch. 179). North Dakota provided a new set of rates, being graduated from 3% on the first $3,000 to 6% on all exceeding $15,000. Pennsylvania re-enacted its 7% net corporate income tax (Act 54). Tennessee amended the excise tax, raising the rate from 3% to 4% which was later reduced to 3.75% (Ch. 176), and raised the rate of the stocks and bonds income tax to 7%, or to 5% where 75% of the corporate property is located and assessable in the state, these rates being later lowered to 6% and 4%, respectively (H.B. 601).

Minor statutory adjustments in the corporate income taxes were made in Arizona (H.B. 68). California (Ch. 19), Connecticut (S.B. 14), Iowa (S.F. 389), Kansas (H.B. 549), Massachusetts (Ch. 108, 383, 395), Minnesota (Ch. 49), Missouri (S.B. 42), New Mexico (H.B. 152), New York (Ch. 499), Oklahoma (S.B. 304), and Utah (S.B. 252). The Georgia supreme court ruled that a foreign corporation merely mining clay in the State was not "doing business" in the State so as to be liable to the Georgia income

tax (190 S.E. 623). In Utah the applicability of the corporate income tax to foreign holding companies was ruled upon (63 P. 2d 1062). South Carolina construed the liability of corporate trustees to the dividend surtax (190 S.E. 249). The justices of the New Hampshire supreme court handed down an advisory opinion relative to "an income tax on sales profits" (190 A. 801). Other points were considered.

INTANGIBLES INCOME TAX

The Oregon intangibles tax made necessary the determination of "liquidation dividends" and their liability to taxation (66 P. 2d 272; 68 P. 2d 474). A similar issue was involved in Massachusetts (10 N.E. 2d 105, 107). In Minnesota shares of domestic corporations are not "credits" so as to be liable to the three-mills tax, in so far as the corporation is taxed in the State on its tangible property (273 N. W. 623). In Pennsylvania the reserves of the Curtis Publishing company are a necessary part of its "manufacturing" business, and therefore not subject to the capital stock tax (192 A. 875).

FRANCHISE TAXES

Only minor adjustments in the corporate franchise taxes were made in Delaware (H.B. 430, H.B. 290), Florida (H.B. 782, S.B. 1074), New Hampshire (H.B. 459), New Jersey (A.B. 221), New York (Ch. 496), Pennsylvania (Act 55, 520), and Tennessee (H.B. 595). New York (Ch. 359, 632) and North Dakota (H.B. 217) modified the initial fees of corporations. The litigation was concerned chiefly with the "fine points" of franchise taxation.

POWER AND UTILITIES

South Carolina eased the power tax by exempting from its provisions wholly owned subsidiaries supplying power to the parent industrial corporation (H.B. 1068). Montana amended the electrical energy producers license tax (H.B. 159).

Several States adopted or increased the gross receipts taxes on utilities. Minnesota increased the gross receipts taxes on freight line companies, sleeping car companies, express companies, trust companies (Ch. 3) and telephone companies (Ch. 7), these taxes being in lieu of *ad valorem* property taxes. That State also provided for a gross receipts tax on telegraph companies which have hitherto been taxed on an *ad valorem* basis (Ch. 4). California adopted a gross receipts tax on the rolling stock of car companies and on carloading companies in lieu of *ad valorem* taxes (Ch. 283).

The Illinois 3% sales tax was made applicable to utilities (H.B. 94) and is in addition to other taxes. It was upheld as applicable to publicly-owned utilities (7 N.E. 2d 294). Montana provided for a 2% tax on telephone receipts (H.B. 102); Nebraska for a two-mills tax on telephone companies (L.B. 179); New York for a temporary 2% on utilities (Ch. 321); Oklahoma for a 2% tax on airports (H.B. 275); and the Pennsylvania 2% rate on utilities was extended for two years with modifications in the tax (Act 56). The New Jersey supreme court held that the State Board of Tax Appeals had authority to set aside as illegal a gross-receipts-tax apportionment made by the State Board of Assessment (191 A. 741).

Oregon assessed fees for the benefit of the utilities commissioner on the basis of gross revenue from interstate business (H.B. 375). Washington fixed the fees to be paid to the Public Service Commission for approvals of stock and bond issues by the Commission (H.B. 66) and required fees to be paid on the gross earnings of utilities (H.B. 510). Certain minor points affecting utilities taxes were adjusted in Connecticut (H.B. 1525), New Jersey (Ch. 157, 158, 159), Tennessee (H.B. 1093), and West Virginia (S. B. 244).

INSURANCE PREMIUMS TAX

The amended premiums tax law of New York bases the tax on the risk located or resident in the State instead of business done in the State (Ch. 530). Minor changes were effected in the premiums taxes of Idaho (S.B. 20), Michigan (P.A. 51), Minnesota (Ch. 361), North Dakota (S.B. 110), South Dakota (H.B. 71),

and Texas (H.B. 8). In Iowa a fraternal-religious mutual aid society not for profit is exempt from gross premiums and *ad valorem* property taxes (274 N.W. 907); and this exemption appears to attach to contracts entered into prior to the conversion of a fraternal society into a legal reserve company (275 N.W. 127). The same issue and the same conclusion were observed in Arkansas (103 S.W. 2d 46; 108 S.W. 2d 484). Questions as to the determination of taxable gross premiums were decided.

BANKS

The movement for equitable taxation of banks was relatively quiescent. North Dakota Senate Resolution N requested Congress to amend Federal laws to permit States to tax national banks. South Carolina applied the 4½% corporate income tax to banks (Act 619). California modified the bank and corporation franchise (income) tax (Ch. 836). Colorado bank income takes a rate of 6%. Pennsylvania extended the rate of eight mills on shares of title and trust companies for two years (Act 59); also similarly extended the eight-mills rate on bank shares (Act 60); but later repealed the share tax on national banks (Act 304). In this repeal the legislature was probably influenced by the outcome of a long legal battle (193 A. 164, 638), according to which a corporation owning bank stock may not be required to include such stock in the valuation of its own shares. Minor matters affecting bank taxes and fees were modified in Connecticut (H.B. 169), Massachusetts (S.B. 402), Minnesota (Ch. 64, 276), Nevada (S.B. 16), and Ohio (H.B. 414). Questions of determining taxable value of shares of national bank stock were involved (10 N.E. 2d 398; 269 N.W. 602; 62 P. 2d 1226).

There were some new taxes on building and loan associations. Vermont made the 2% income tax applicable to such associations (H.B. 336). Pennsylvania provided for the taxation of certain building and loan association stock (Act 22). In 1933 New Jersey exempted "cash on hand or on deposit and loans or collateral of savings" institutions. In vain did general corporations seek to avail themselves of this exemption privilege (191 A. 843; 193 A. 844).

ESTATE AND INHERITANCE TAXES

By H. R. Enslow

New York State Department of Taxation and Finance

NEW FEDERAL REGULATIONS

The Federal estate tax law was not amended in 1937. It will be recalled that only a minor legislative change was made in 1936. A new edition of rules and regulations (Regulations 80) for the administration of the Federal tax was issued in 1937. Many changes, largely of a clarifying nature, were made, including the new rates of the 1935 and 1936 acts and recent treasury decisions.

FEDERAL RECEIPTS

The increased estate and gift taxes imposed in 1934 were reflected in increased receipts in 1936. The Secretary of the Treasury has pointed out that a considerable part of the increased receipts may be attributed to the fact that during the fiscal year ended in 1936 the full effect of the increased rates of the Act of 1934 was applicable for the first time. No doubt also the increase in values influenced collections. In the year attendant upon economic recovery ended in 1935, $140,400,000 was received from the estate tax. This tax in the year 1936 yielded $218,800,000, an increase of $75,400,000. Similarly, the gift tax in the year ended in 1935, yielded $71,700,000 and in the year ended in 1936, $160,100,000, an increase of $88,400,000.

This tendency continued in the fis-

cal year ended June 30, 1937, the Federal estate tax producing $281,635,983.21, an increase of 28.7 per cent over the preceding year. The gift tax, however, fell off, decreasing from $160,058,761.47 to $23,911,783.26 or 85 per cent.

According to *The New York Times* of Dec. 23, 1937, Federal receipts from the estate tax for the first 11 months of the calendar year 1937 were $163,175,161, a gain of $96,170,985 over the preceding year. Gift taxes in the same period were $2,305,930, a loss of $1,437,950.

QUESTIONS OF DOMICILE

The question as to which State may tax continued to receive attention in 1937. One of the outstanding incidents in this connection is the litigation over the estate of Col. Edward H. R. Green, son of the late Hetty Green. New York, Massachusetts, Texas and Florida are struggling for the right to collect taxes on what he left. Each claim he was their resident. An interesting move was made by Texas in bringing an original suit in the United States Supreme Court against the other States in order to prevent collection of taxes on the estate. The matter has not been determined at the time of writing.

The case of *Riley et al.*, v. *Worcester County Trust Company, Estate of Robert H. Hunt,* went through two more steps, and was disposed of by the United States Supreme Court. In 1936 the United States District Court of Massachusetts ruled that, under the provisions of the Interpleader Act adopted in that year, it had jurisdiction to determine whether Hunt was a resident of Massachusetts or of California. The United States Circuit Court of Appeals, First Circuit, early in 1937 ruled that the Federal Courts do not have such jurisdiction. The United States Supreme Court on Dec. 6 sustained this position. The high court through Justice Stone said:

"The question for decision is whether the Federal Interpleader Act . . . may be availed of for the litigation and final disposition of the rival claims of two states, each asserting through its officers the right to recover death taxes on the ground that decedent was last domiciled within its boundaries.

". . . Petitioner prays that the Court order respondent officials of the two states to interplead their respective claims for the tax, that the court determine the domicile of decedent, the amount of the tax, and the person or persons to whom it is payable; and that respondents be enjoined from any other proceding to collect it.

"Respondents, the California officers, . . . moved to dismiss the complaint upon the ground, among others, that the suit was brought against respondents in their official capacity and was in substance a suit against the state forbidden by the Eleventh Amendment. The District Court overruled that contention and granted a temporary injunction restraining defendants until further order of the court from taking any action to assess the tax. The Court of Appeals for the First Circuit reversed holding that the maintenance of the suit is an infringement of the Eleventh Amendment which provides that 'The judicial power . . . shall not be construed to extend to any suit in law or equity commenced or prosecuted against one of the United States by citizens of another state . . .'

". . . A suit nominally against individuals, but restraining or otherwise affecting their action as state officers may be in substance a suit against the state, which the Constitution forbids. . . . Generally, suits to restrain action of state officials can, consistently with the constitutional prohibition, be prosecuted only when the action sought to be restrained is without the authority of state law or contravenes the statutes or Constitution of the United States.

"Petitioners' contention is that here the prospective official action of respondents involves a threatened violation of the Constitution. State law can afford no sanction. It is said that as the officers of each state assert

the right to collect the tax out of decedent's property within the state, they may succeed in establishing that right by a judicial determination in each that decedent was last domiciled there although he could not be domiciled in both; that neither state could constitutionally authorize its officials to impose the tax if decedent were last domiciled elsewhere, and petitioner is thus exposed to the danger of double taxation, which the Constitution forbids. As those officials threaten acts whose consequence may be taxation which is unauthorized by any valid state enactment petitioner insists that the suit brought to restrain such action does not run against the state.

". . . Petitioners' real concern is that the judgment of a California Court, if it should decide that decedent was domiciled there, may be erroneous or may conflict with that of the Massachusetts courts. . . . The Constitution of the United States does not guarantee that the decision of the state courts shall be free from error. Neither the Fourteenth Amendment nor the full faith and credit clause requires uniformity in the decisions of the courts of different states as to the place of domicile, where the exertion of state power is dependent upon domicile within its boundaries. Hence it cannot be said that the threatened action of respondents involves any breach of state law or of the laws or Constitution of the United States. Since the proposed action is the performance of a duty imposed by the statute of the state upon state officials through whom alone the state can act, restraint of their action, which the bill of complaint prays, is restraint of state action, and the suit is in substance one against the state which the Eleventh Amendment forbids."

STATE LEGISLATION

Arizona enacted an estate tax law in place of its former inheritance tax. The new statute became effective July 1, 1937. A specific exemption of $25,000 is allowed. Gifts to Arizona municipalities and to domestic, religious, charitable and educational operations are also exempt. Funeral expenses, administration expenses, claims against the State, unpaid mortgages, etc., are allowed as deductions and the rates on the net estate range from 2 per cent on the first $25,000 to 20 per cent on the bracket exceeding $5,000,000.

A number of the States made changes of relatively minor importance which space will not permit mentioning here. Wisconsin extended its emergency tax to 1941 and increased the rates. New York extended its temporary rates for another year, made the lien of the tax inferior to that of previous mortgages, and permitted the deduction of expenditures for perpetual care. West Virginia extended exemption to certain domestic educational, charitable, etc. institutions. Michigan adopted reciprocal enforcement of domiciliary death duties. New Hampshire changed its rates and the classes of beneficiaries. North Carolina made numerous administrative changes. California will now permit the state comptroller with the consent of the court to compromise taxes on estates claiming domicile outside the State. Intangibles having actual or business situs in Colorado but taxed in the State of domicile will be exempt in Colorado only if 30 days' notice is given of intention to pay the tax in the State of domicile.

NEW GIFT TAXES

New gift taxes were adopted in Colorado, Minnesota and North Carolina bringing to six the number of States having such measures in support of their inheritance or estate taxes. The Colorado law which became effective Aug. 4, 1937 divides beneficiaries into four classes, the fourth class being entirely exempt, no tax being laid on gifts to the United States, the State, charitable associations, etc. In Class A, the wife is given an exemption of $20,000, the exemption for others being $10,000, and the rates progress from 2 per cent on the first $2,500 above the exemption to 8 per cent on the gifts above $500,000 in excess of the exemption. The rates for Class B beneficiaries

range from 3 per cent to 10 per cent; Class C, 4 per cent to 14 per cent; and Class D, 7 per cent to 16 per cent.

The Minnesota gift tax law became effective July 16, 1937. Five classes of beneficiaries are provided. Gifts to the State and its subdivisions, charitable associations, etc. are exempt. Wives and children fall in Class A, enjoying an exemption of $10,000 each. Rates on such beneficiaries range from ¾ of one per cent on the first $15,000, less the exemption, to 9 per cent on gifts over $1,000,000. Class B rates run from 1⅛ per cent to 13½ per cent; Class C from 2¼ per cent to 27 per cent; Class D from 3 per cent to 36 per cent; Class E from 3¾ per cent to 45 per cent.

The North Carolina law became effective March 13, 1937. Beneficiaries have been divided into four classes, gifts to the State, etc. being entirely exempt. In Class A a wife is given an exemption of $10,000, children $5,000 each, others $2,000. The first $5,000 after the exemption is taxed at 1 per cent and the rates range to 12 per cent on gifts exceeding the exemption by $3,000,000 or more. Class B (brother, sister, etc.) are taxed 4 per cent on the first bracket and 24 per cent on the highest bracket. No exemption is given to Class B or Class C beneficiaries. Rates for Class C beneficiaries range from 8 per cent to 25 per cent. Wisconsin renewed its temporary gift tax.

DISTRICT OF COLUMBIA INHERITANCE TAX

Congress, acting as the Legislature for the District of Columbia, adopted an inheritance tax applicable there Aug. 18, 1937. Beneficiaries were divided into four classes. Parents, spouses and children were placed in Class A and given an exemption of $5,000, the net estate being taxed 1 per cent. Brothers, sisters and nephews or nieces of whole or half blood were placed in Class B for which the exemption is $2,000 and the rate of tax 3 per cent. Grandnephews, grandnieces and others were placed in Class C for which the exemption is $1,000 and the rate of tax 5 per cent. Class D includes gifts for public, charitable, educational, etc. purposes within the District of Columbia. It will be noted that the District of Columbia inheritance tax does not incorporate the principle of graduation. Returns must be filed within 15 months after the decedent's death, and the tax must be paid within 18 months. The Commissioners of the District of Columbia have supervision of the enforcement of the law and may make consistent rules and regulations.

An additional tax in the form of an estate tax was imposed on resident estates equal to the difference between 80 per cent of the gross Federal estate tax of the Revenue Act of 1926 and the total estate and inheritance taxes actually paid to any State or Territory whenever the total of such taxes is less than the credit allowed under the Federal Revenue Act of 1926, the purpose being to gain for the District the benefit of the Federal credit. A verified copy of the Federal estate tax rate must be filed with the assessor for the District of Columbia.

Temporary regulations were issued by the Commissioners of the District of Columbia on Sept. 30, 1937.

AUTOMOBILE TAXES

By Beulah Bailey Thull

New York State Department of Taxation and Finance

REGISTRATION AND REVENUE

During the year 1936 there were 28,211,291 motor vehicles registered in the United States, the latest complete figures available. This is the all time high and was 1,990,457 or 7.6 per cent more than in 1935. Of these, 4,000,000 were new cars. The

1936 new car registration increased 24 per cent over 1935. The revenue from registration fees increased from $322,974,000 in 1935 to $359,783,000 in 1936. The net total state receipts from motor fuels for 1936 was $686,-831,000 as against $616,851,671 for 1935, an increase of 11 per cent. In addition there was the Federal tax which yielded $186,321,448, making a total of $873,152,448 from gasoline. The Federal excise taxes levied on automobiles yielded $151,805,680. This made a total revenue from automobiles and motor vehicle fuels of $1,384,741,128. In 1935 the comparable total revenue yield was $1,235,420,070. In 1936 the average Federal and state tax per car was $49 and in 1935 it was $47. These figures exclude the personal property tax.

The increased revenue was due to the increased number of cars with the attendant increased consumption of gasoline. There were some increased fees but it is difficult to determine just what effect a change of base or of brackets has on revenue. The 1937 legislature made many such changes. There is no standardization between States as to basic rates, and legislation of 1937 emphasized also the lack of stability.

INTERSTATE REGULATION

Thirty-four States have Legislative Committees on Interstate Co-operation. The idea of regional conferences of state administrators and of interstate compacts is developing rapidly. There is no field where the need for uniformity of regulations is greater than in the field of motor vehicles. The motor vehicle administrator of one of the great eastern States said at a recent conference: "If we could get say eight or ten of the great eastern states uniform in every respect, including registration, and reciprocity, we would have accomplished something for the motorist." Motor transportation cannot be kept within States. If the States are too far apart in their fees and regulations there is always the Interstate Commerce Commission ready to give forced standardization.

TAX BASES

It is hard to say what is the trend of legislation in regard to a tax base. Ten years ago horse power, weight and in a few instances piston displacement were the most common bases. Today there is a tendency to seek a base that more truly reflects ability to pay and use. Sixteen States have a flat rate, the car use being reflected in the gasoline tax. Kentucky this year changed from horse power to the flat rate. Utah changed the registration base for carriers from gross weight to actual weight. Utah has a flat rate of $5 for passenger cars and trucks. An excise tax based on value is levied in four States in lieu of a personal property tax, the revenue going to the localities. Arizona and Washington levied such a tax in 1937 payable annually. In contrast is the sales tax payable once and based not on value but list price. There is a sales tax on automobiles in 24 States, Alabama and Kansas levying one for the first time in 1937. Indiana has turned to tires as a fee base for motor carriers. After Jan. 1, 1938 only vehicles with pneumatic tires may be driven on the highways of Indiana.

REGISTRATION FEES

There was in 1937 a reduction of the motor vehicle registration fee, on common carriers, in Colorado and in Maine on all cars. The Maine reduction is 5 per cent of all fees over $2. The house trailer, or house car or trailer coach and motor caravans or driveaway companies which drive new motor vehicles from place of manufacture to place of sale, are two 1937 problems. Nine eastern States have participated in an interstate conference whose purpose was to have for house trailers adequate laws providing for sanitary facilities, highway safety, registration, taxation and reciprocity.

Indiana places a flat tax of $10 on house trailers; Maine, $5; Michigan classifies them with trailers at 35 cents per 100 lbs. up to 1,000 lbs., and $1 per 100 lbs. over 1,000 lbs. Montana increases the rate on all trailers, it

formerly being $2 on trailers under one ton and $5 on trailers over one ton. The new rate is $15 on trailers up to two tons; $20, two to three tons; $30, three to four tons; and $200 on five tons or over. Oklahoma includes house trailers in the same classification as private cars; the rate is $12.50, formerly $11.50 plus $1.50 for every $100 value over $600. Oklahoma is the only State to use cost alone as a basis for registration fee although the truck fees are based on weight. In South Dakota the fee on house trailers ranges from $7.50 on trailers weighing less than 1,000 lbs. to $30 on those weighing 3,000 lbs. plus $5 on each 500 lbs. over 3,000 lbs. Nevada exempts house trailers from the trailer registration fee, 45 cents per 100 lbs., but levies on them the flat rate license of $20. New York places them in a special class with camping and boat trailers and taxes them at 80 cents per 100 lbs. of unladen weight with a minimum of $4. In Washington there is a flat rate of $3 on all motor vehicles, but trucks, trailers and semi-trailers pay an additional fee varying from $10 to $250 depending on the weight.

California charges $15 for caravaning vehicles, $7.50 being presumably for the use of the public highways and $7.50 to reimburse the State for expenses incurred in administering police regulations and public safety. North Carolina levies a regular fee for one set of license plates of $100 and $5 for each additional set for driveaway companies. Ohio charges such companies $50 for operators' permits and $3 for each certified copy. Wisconsin charges $25 for the first set of plates and $3 for each additional set.

GASOLINE TAXES

The gasoline tax rate is still being increased. In 1936 the weighted average for the various States was 3.85 cents; in 1935 it was 3.81 cents. It will be higher for 1937 as Rhode Island increased the rate from two cents to three cents effective July 21; Minnesota from three cents to four cents from April 23, 1937 to July 1, 1939; West Virginia from four cents to five cents. Missouri had in its constitution a provision adopted in November, 1928 providing that for 10 years the gasoline tax would be two cents. This expires in December, 1938, and the 1937 legislature levied a three-cent tax effective Dec. 7, 1938. New York imposes a second additional tax of one cent from May 10, 1937 to June 30, 1938. New York's total tax is four cents. Pennsylvania continues until May 31, 1939 its emergency tax of one cent, making the total tax four cents. California imposes a three-cent tax on Diesel fuel, New Mexico a 7½-cent tax, and South Dakota and Illinois include now motor fuel, kerosene, distillate, fuel oil and crude oil. Utah levies a tax of 1⅛ cents per mile on passenger cars and of 1½ cents per mile on carriers using Diesel fuel. This is in addition to all other registration fees.

Whether gasoline tax monies are or are not to be diverted from highway use is still a much argued question. New York continues to divert the revenue from the emergency taxes. A Maryland law states that the Governor shall include in his budget bill all receipts from the motor vehicle and gasoline taxes so that they will not become diverted. Indiana has pending a constitutional amendment that would require all gasoline and motor vehicle monies to be used entirely for maintenance and improvement of bridges and highways. California permits the use of certain gasoline monies for direct special assessment relief. North Dakota changes the basis of the distribution of gasoline tax monies to the counties from amount of revenue collected to number of automobiles registered.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN TAXPAYERS' LEAGUE, Munsey Building, Washington, D.C.

NATIONAL HIGHWAY USERS CONFERENCE, National Press Building, Washington, D.C.

NATIONAL TAX ASSOCIATION, 195 Broadway, New York City.

NEW ENGLAND STATE TAX OFFICIALS' ASSOCIATION, Room 236, State House, Boston, Mass.

TAX POLICY LEAGUE, 309 East 34th Street, New York City.

TAX RESEARCH FOUNDATION, 302 East 35th Street, New York City.

TAX REVISION COUNCIL, 850 East 58th Street, Chicago, Ill.

NORTH AMERICAN GASOLINE TAX CONFERENCE, 844–46 Consolidated Bldg., Indianapolis, Ind.

DIVISION VIII

PUBLIC RESOURCES AND UTILITIES

FEDERAL SURVEYS AND MAPS

By W. L. G. Joerg

Chief, Division of Maps and Charts, The National Archives

NATIONAL TOPOGRAPHIC MAPPING

The response to the Senate Resolution of April 17, 1936, calling on the Secretary of the Interior for a program to expedite the topographic mapping of the United States, to which reference was made in last year's report (The American Year Book, 1936, p. 251), is contained in a letter from the Secretary to the President of the Senate dated Jan. 28, 1937, and published as 75th Congress, 1st Session, Senate Document No. 14. In contradistinction to the earlier plan by the Federal Board of Surveys and Maps that was published in the report of the National Resources Board of Dec. 1, 1934 The American Year Book, 1935, p. 263), in which it was attempted to work out schedules and expenditures in detail, the present plan is cast in general terms so that it may be flexible enough to permit of adaptation to changing conditions as they arise, such as changes in the areas of urgency, changes in the needs for detail, and new developments in mapping techniques.

The plan envisages a period of 20 years in which the cost of mapping itself is calculated as $80,000,000 and of geodetic triangulation and leveling as $20,000,000, or a total of $100,000,000 or $5,000,000 a year ($4,000,000 to the Geological Survey for topographic mapping and $1,000,000 to the Coast and Geodetic Survey for geodetic work). The area to be mapped annually would be 75,000-80,000 square miles. In the 20-year period this would amount to about 1,500,000 square miles. This would include much of the entirely unmapped areas (given as 1,359,000 square miles, or 46 per cent of the continental United States), the inadequately mapped areas (741,000 square miles, or 24 per cent), and the areas mapped without contours (165,000 square miles, or 5 per cent). Together with the area at present adequately mapped (761,000 square miles, or 25 per cent), about 2,260.000 square miles, or nearly 75 per cent of the area of the country, would be accounted for through this program.

The actual expenditures for topographic mapping for the fiscal year ended June 30, 1937, as appears from the figures to be cited immediately, amounted to above half the yearly sum called for in the program just outlined ($2,000,000 by the Geological Survey and a conjectured $500,000 from the total Coast and Geodetic Survey expenditures of $2,738,000). The area of new survey, resurvey, revision, and mapping without contours was 19,282 square miles, or about one-quarter the annual area proposed in the program.

STATE MAPS

The regular appropriation to the Geological Survey for the fiscal year 1936-37 was $2,807,000. Additional funds derived mainly from emergency allotments from the Public Works Administration and co-operative funds from States, counties, and

municipalities brought the total available to about $4,222,000. Of this, $1,678,000 was spent for topographic surveys and $326,000 for the production of geologic and topographic maps. The area covered by new topographic surveys, resurveys, and revision amounted to 14,502 square miles, which will yield 102 contoured topographic maps of areas in 36 States and Puerto Rico. This brings the total area of the country topographically mapped to 47.4 per cent, the year's increment amounting to 0.3 per cent. In addition, 4,780 square miles in five States were air-photographed for the production of planimetric maps, *i.e.* maps without contours, mainly in Michigan, Louisiana, and Tennessee. Aerial photography was also used as a basis for topographic mapping in the case of 26 sheets.

PUERTO RICO SURVEY

The work in Puerto Rico represents the beginning of standard topographic surveying there by the Geological Survey. It is being carried out in co-operation with the Commissioner of the Department of the Interior of Puerto Rico. The surveys for three sheets in 1:30,000 have been completed in the southwestern corner, and for two sheets begun in the northwestern corner. The whole island will call for about 60 sheets.

LOS ANGELES COUNTY MAP

Another distinctive accomplishment is the completion this year of the mapping of Los Angeles County, California, of which the sheets have long been appearing on the scale of 1:31,680. The urban character of this area makes these sheets of special interest in view of the rigorous rendering of the built-up areas with the true house outlines, an element practically never available in this country on commercially published city maps.

COMPOSITE MAP OF THE UNITED STATES

The question of the mapping needs of Federal and State agencies and the priorities of areas to be mapped has been given consideration by a committee of the Federal Board of Surveys and Maps. Based on a letter sent to 65 agencies to which nearly 50 letters and about 15 maps had been received in reply a composite manuscript map of the United States was prepared showing the areas deemed by the various agencies as then most in need of being mapped in the immediate future. This is the first time that the joint needs of those most concerned have been thus represented graphically, and this map should prove of value in planning the survey programs of the years that lie ahead.

STATE GEOLOGICAL SURVEYS

By Raymond C. Moore

Secretary, Association of American State Geologists

GENERAL

Modern civilization depends to an important degree upon the use of mineral resources. As an aid to mineral development, 40 States had active geological surveys during 1937–1938. Available appropriations to the state geological surveys during the fiscal year were approximately $1,289,620. This amount was increased about $589,376 by the U. S. Geological Survey, U. S. Coast and Geodetic Survey, Work Progress Administration, U. S. Bureau of Mines, U. S. Department of Agriculture, and by state, county, and local organizations and individuals co-operating with state surveys, making a total of $1,844,996.75 devoted to the investigation of state mineral resources. Approximately 117 geologists and 69 other technical workers were employed full time and 145 geologists and 49 other workers part time on 464 state survey projects, including mineral resource, geologic, topographic, soil

surveys, stream-gaging, and other projects. Some 306 technical reports and maps were being prepared for publication or published.

BASIC GEOLOGY *

Alabama.—Paleontology of Coastal Plain region.

California.—Reports ready for press: Paleozoic section in the Nopah and Resting Springs Mountains; Bibliography of geology and mineral resources of California for 1931–1936; minerals of California; geology and mineral deposits of the western San Gabriel Mountains, Los Angeles County. Reports in preparation: Geology of the Newberry and Ord Mountains; geology of the San Nicolas and Santa Barbara Islands; geology and mining of the borate deposits of the Amboy quadrangle; geology and mineral deposits of the Duncan Mills and Sebastapol quadrangles; geology and ore deposits of the Bodie mining districts; geology of Shasta copper district.

Connecticut.—Report on west wall of the New England Triassic lowland; study of bedrock geology of western highlands.

Florida.—Report completed on mollusks of Tampa and Suwannee limestones; reports in preparation on ground water study of western Florida and physiography of Florida. Study of well cuttings.

Georgia.—Geology of Georgia.

Illinois.—Report completed on typical rocks and minerals in Illinois; reports in press on stratigraphic studies of Pennsylvanian outcrops in part of southeastern Illinois. Pennsylvanian stratigraphy; Pennsylvanian paleontology and paleobotany; subsurface studies of Paleozoic formations; Pleistocene system; geologic structures of the Illinois Basin; areal investigations and geologic mapping.

Indiana.—Report on Glacial geology of southern and south-central Indiana and articles on Indiana geology.

Iowa.—Pennsylvanian stratigraphy, glacial studies; general stratigraphy; surface geology; physiographic history of Mississippi River; statement to accompany state geologic map.

Kansas.—Report completed on geology of Brown and Doniphan counties; Late Paleozoic pelecypods, Pectinacea; the Mississippian rocks of Kansas. Reports in progress on geologic structure of Kansas; Tertiary and Quaternary geology of southwestern Kansas; insoluble residues of the Arbuckle formation. Investigation of porous strata beveled by peneplanation and sealed by overlying shale.

Kentucky.—Reports in progress on stratigraphy of the Western Kentucky Coal basin and common rocks and minerals of Kentucky.

Louisiana.—Completed study of Tertiary Bryozoa; cap-rock petrology of salt domes; geology of Grant and La Salle parishes: geology of Ascension and Iberville parishes. Geology of Winn, Caldwell, Brenville, Jackson, Natchitoches, Rapides, Washington, and St. Tammany parishes.

Maryland.—Reports on application of recent structural methods in interpretation of crystalline rocks of Maryland; structure and age of the Port deposit granodiorite complex; structure of the gneiss domes near Baltimore; structures and age of volcanic complex of Cecil County; structure of the metamorphosed gabbro complex at Baltimore; Upper Cretaceous deposits of the Chesapeake and Delaware Canal of Maryland and Delaware. Crystalline rocks of Maryland.

Michigan.—Reports on Pleistocene geology of Tahquamenon-Manistique drainage basin; Pennsylvanian of Michigan; Trenton formation in Michigan; reports in progress on Geology of Michigan sand dunes, and Arenac County. Resurvey of Menominee iron-bearing district, Dickinson Co.; geophysical survey of a portion of the Copper Range, Houghton Co.

Minnesota.—Report in progress on anorthosites of Lake County. Geology of Cook County and Duluth area; Cretaceous of Minnesota; structure

* To conserve space, projects under each classification are listed without description. Details are available from the respective State Geologists. Completed projects are indicated by completed or report; all others are in progress.

of Vermilion range; stratigraphy; geomorphology.

Mississippi.—Reports on Little Bear residuum and geologic history of Legion State Park.

Missouri.—Application of insoluble residue method to stratigraphic studies of drill cuttings; stratigraphy northwest Missouri, Ozark region, southeast Missouri lowlands; magnetic maps southeast and northwest Missouri; electric resistivity studies; self potential studies of pyrite deposits.

Montana.—Physiography of Gravelly Range; correlation of Cambrian strata.

Nebraska.—Reports in progress on Carboniferous Bryozoa; geologic column in Nebraska; correlation of Omaha wells, Fremont well, Holdrege well, Hyannis well; recorrelation of Nehawka and Lincoln wells and Platte Valley section. Completed mapping Tertiary formations. Pennsylvanian and Permian stratigraphy; subsurface geology.

Nevada.—Report on geology of Delamar district, Lincoln County.

New Jersey.—Seismological survey to determine depth to rock floor along a line through Jacksons Mills, parallel to the assumed dip of the rock floor.

New Mexico.—Report on New Mexico Fusulinidae.

New York.—Reports on geology of Santa Clara quadrangle, Piseco Lake quadrangle, Thirteenth Lake quadrangle. Geology of Coxsackie, Catskill, Clyde and Sodus Bay, Wellsville, Randolph. Morrisville, Indian Lake, and Newburgh quadrangles.

Ohio.—Reports in progress on geology of Lucas County, Holmes County, and on Monongahela series; local studies of Pennsylvanian system.

Oklahoma.—Report completed on geology of Muskogee-Porum district, revision of stratigraphy of Simpson group, Arbuckle limestone in Arbuckle and Wichita Mountains, Pleistocene terraces in Grady County; reports in progress on geology of northwestern Cimarron County and Washington and Nowata counties. Stratigraphic studies of middle Pennsylvanian in central Oklahoma.

Nevada.—Mines catalogue in progress.

Pennsylvania.—Report on geologic section in Harrisburg region; field work completed on Upper Ordovician stratigraphy. Devonian stratigraphy; stratigraphy of Oriskany sandstone; Silurian stratigraphy; problems of metamorphics of southeastern Pennsylvania.

Tennessee.—Reports completed on stratigraphy of the Lowville-Trenton bentonite; stratigraphy of the Knox formation; reports in progress on geology and mineral resources of Dickson County; geology of the Gainesboro quadrangle. Insoluble residues in central Tennessee; stratigraphy of Knox dolomite.

Texas.—Reports on geology of Leon County; stratigraphic, structural, and paleontologic studies of Mississippian, Pennsylvanian, and Permian rocks in north-central Texas.

Vermont.—Reports on Vermont geology, Vermont mineral industries, a glacial pothole.

Virginia.—Reports completed on Warrenton quadrangle, geography and mineral resources of Scott County, outline of geology and mineral resources of Goochland County, bibliography of mineral resources and geology; reports in progress on Stony Man quadrangle, Appalachian Valley, geography and mineral resources of Russell County, index to geological formations. Completed work on geology of Draper Mountain fenster, geology of Brunswick county, Abingdon, Eagle Rock, Natural Bridge quadrangles, geology of Powell County; work in progress on geology of Great Gossan lead, Shenandoah National Park, Hot Springs district, geology of Virginia, geology and mineral resources of Frederick County, Richmond districts, and Giles County, physical features of Virginia, rocks and minerals of Virginia.

Washington.—Completed preparation of "library of rocks," geology of south half Colville quadrangle, bibliography of Washington geology and resources, list of publications of all state geologic organizations; origin of certain gneisses and schists of the

Kettle Range, faunal studies of Mesozoic formations, structure data, paleobotany of Washington Tertiary, index to stratigraphy of Washington.

West Virginia.—Reports on Bibliography of West Virginia and geology and natural resources.

Wisconsin.—Field and laboratory studies of Cambrian and Niagara dolomite.

Wyoming.—Completed stratigraphy of Sundance formation and related Jurassic rocks and their petroleum aspects, and geology of a portion of east-central Carbon County; origin of late Upper Cretaceous sediments of Laramie and Hanna Basins, structure of southwestern portion of Laramie Basin, geology of a portion of the Wind River Basin, Owl Creek and Absaraka Mountains, stratigraphy of Pennsylvanian rocks of the Laramie Range, geology of northwest portion of the Red Desert, stratigraphy of the pre-Pennsylvanian rocks of southeastern Wyoming, geology of southwest portion of Platte County and northwest portion of Laramie County.

OIL AND GAS

Arkansas.—Published list of Arkansas oil and gas wells; completed duplicate file of all oil and gas well logs in Arkansas outside of producing areas; oil shales of northern Arkansas.

California.—Geologic formations and economic development of the oil and gas fields of California.

Georgia.—Investigation of oil and gas possibilities of Coastal Plain.

Illinois.—Reports completed on geology and oil possibilities of Illinois Basin, oil and gas development in 1935 and 1936, oil and gas drilling reports; report in progress on correlation problems in the new Illinois Basin fields. Completed work on western Lawrence oil fields, structural studies in Illinois Basin; oil and gas stratigraphy and structure, physical and chemical tests of oil sand cores, data on repressuring plant methods, studies of water flooding, scouting of drilling wells.

Indiana.—Completed preparation of oil field maps and county dry hole maps, prevention of stream pollution by oil waste, annual reports on oil and gas production; compilation of well records and well cuttings, structural data in oil and gas producing areas.

Kansas.—Reports completed on geology and oil and gas resources of Trego, Gove and Logan counties and on development in oil and gas industry of Kansas; reports in progress on geology and oil and gas resources of Phillips County, and of Barber County. Problems in petroleum technology; collection of data on oil and gas wells of eastern Kansas.

Louisiana.—Report in progress on oil and gas and mineral industries of Louisiana for 1936 and 1937.

Michigan.—Well logs, oil wells, water wells, issued each month; record of drilling permits issued weekly; geology of Allegan County with respect to oil and gas possibilities; geology of Muskegon and Gladwin counties; oil and gas structures in State. Reports completed on West Branch and Crystal oil fields.

Mississippi.—Reports in progress on Jackson gas fields and state deep test well.

Missouri.—Report in progress on oil and gas possibilities of northwest Missouri. Mapping oil and gas structures Jackson County; dry hole map northwest Missouri.

Montana.—Report on natural gas in Montana.

Nebraska.—Study of drilling wells in progress; studies completed on wells drilled during past few years.

New York.—Recent oil and natural gas developments in New York State.

Ohio.—Determination of structures on local areas; collection of oil and gas well logs.

Pennsylvania.—Report on Bradford oil field; stratigraphy, structure and mapping of oil sands of northwestern Pennsylvania.

South Dakota.—Completed structural survey in Harding County; structural survey in Stanley Co.

Tennessee.—Reports on oil and gas in west Tennessee and oil and gas in northeastern Highland Rim.

Texas.—Report on petroleum resources of Texas.

Washington.—Completed work on oil and gas of western Skagit County; laboratory examination of drill cuttings, oil and gas of western Snohomish County; compilation of oil and gas tests.

West Virginia.—Report on physical and chemical properties of gas; completed research on oil and gas well cuttings.

COAL, COKE AND PEAT

Alabama.—Warrior coal field.

Illinois.—Completed report on summary list of areas in western, northern, and central Illinois recommended for special investigation as possibly suitable for strip-mining; report in progress on coke from Illinois coals. Study of constitution of Illinois coals; constitution of commercial coal fines; use of Illinois peat in the manufacture of light-weight structural and refractory products; general coal report: physical properties of coal under three variables (temperature, pressure, and time); composition and fusibility of ash from Illinois coals; proximate and ultimate analysis of coal; nature of moisture in coal; review of literature on composition and constitution of coal.

Indiana.—Mapping of coal outcrops, and collection of stratigraphic information in coal areas; supervision of sealing of abandoned slope and strip mines to prevent stream pollution.

Iowa.—Iowa coal studies. three units completed, one in progress.

Kansas.—Report on coal fields of southeastern Kansas.

Michigan.—Report in progress on coal resources.

Montana.—Report in progress on beneficiation of Montana coals by flotation.

Washington.—Catalogue of coal mine locations.

West Virginia.—Coal report in progress.

METALLIC MINERALS

Alabama.—Barite deposits of Alabama completed; brown ore of state.

Arizona.—Report on gold placers and placering, and on geology and mineral deposits of Tombstone district; report in preparation on Jerome quadrangle.

Arkansas.—Manganese carbonates of northern Arkansas.

California.—Mineral resources of Plumas and Los Angeles counties completed; mineral resources of El Dorado and Inyo counties; mineral locality map of California.

Georgia.—Report in progress on gold deposits of Georgia.

Idaho.—Reports on geology and ore deposits of Warren mining district, Idaho County; geology and mineralization of Atlanta district, Elmore County; geology and ore deposits of Boise Basin district, Boise County, and of Murray-Pritchard gold district. Reports in progress on geology and ore deposits of Kootenai County; geology of the silver belt, Shoshone County; high-bench placer ground studies of central Idaho. High-bench placer ground studies in the Florence-Slate Creek districts.

Michigan.—Investigation of reported gold occurrences in glacial deposits.

Missouri.—Pyrite and marcasite deposits of Ozark region.

Montana.—Reports in progress on geology and ore deposits of Rochester, Highland and Jardine districts; platiniferous gold-copper deposits, Ravais Creek district; iridescent filming of sulphide minerals.

New Mexico.—Report on ore deposits of San Miguel County. Geology and ore deposits of Virginia (Lordsburg) mining district, Little Hatchet Mountains, Grant and Hidalgo counties, and Magdalena district.

New York.—Origin of the magnetite deposits at Lyon Mountain, report completed.

North Carolina.—Reports on gold and copper deposits.

Oklahoma.—Completed preliminary investigation of iron ores in Wichita Mountains; preliminary investigation of manganese deposits in red beds.

Oregon.—Contact metamorphic deposits tungsten and molybdenum; feasibility of electric furnace steel industry; chrome and quicksilver de-

posits. Report on stream pollution by placer mining.

Tennessee.—Reports on manganese deposits of Perry County, zinc and complex veins in the Central Basin, gold deposits of state.

Virginia.—Iron deposits.

Washington.—Card files for mines, mining companies, and mineral occurrences completed; examination of operating mines; cinnabar and chromite resources; manganese resources of Olympic Penninsula.

NONMETALLIC MINERALS

Alabama.—Limestone and dolomite deposits.

Arkansas.—Completed list of stone, sand and gravel deposits, and limestone quarry in northern Arkansas; commercial minerals of Magnet Cove.

Florida.—Mineral resources of State.

Georgia.—Report in progress on sedimentary kaolin deposits; investigation of glass sand deposits, limestone deposits of Coastal Plain, granite deposits including research on utilization of granite dust waste.

Illinois.—Reports completed on Illinois mineral industry in 1935; agricultural limestone distribution in 1936; clay product industry in 1936. Reports in progress on Illinois mineral industry in 1936; mica in argillaceous sediments; fluorspar industry of the United States, with special reference to Illinois-Kentucky district. Petrology of Illinois clays; physical properties of clays; composition and base exchange characteristics of Illinois clays and shales; clay resources of the Chicago area; beneficiation of Fuller's earth; decolorization of clay and silica; utilization of fluorspar; sand and gravel resources; electrical resistivity survey of buried sand and gravel; Chicago area dolomites; chemical stratigraphy of southern Illinois limestones.

Kansas.—Report on mineral resources of Kansas counties, and appendix to rock wool bulletin. New uses for volcanic ash; clay and chalk resources.

Michigan.—Report on foundry sands completed, limestone resources in progress.

Mississippi.—Clays of Winston County; laboratory tests of clays.

Missouri.—Report in progress on barytes deposits. Clays of southeast Missouri lowland area.

Montana.—Reports in progress on clay resources and Montana chromite as refractory.

New Mexico.—Report in progress on clays of New Mexico and their economic features.

New York.—Mining and quarry industries for 1934–1936.

North Carolina.—Reports on feldspar, mica, vermiculite, pyrophyllite, spodumene.

Ohio.—Reports in progress on mineral resources and shales of the State; collection of limestone samples and chemical analyses.

Oklahoma.—Completed research on rock wool and investigation of bleaching clays; study of phosphatic limestones.

Oregon.—Investigation of refractory clays.

Pennsylvania.—Completed detailed mapping of geology and mineral resources of Fayette, Northampton, Lehigh, and York counties; Smicksburg Quadrangle, south half Clearfield County, and Hamburg Quadrangle in progress.

Tennessee.—Reports on lightweight possibilities of the Porter's Creek clay and phosphate deposits; clay and shale resources, molding sands.

Virginia.—Report on Bibliography of mineral resources and geology. Completed work on commercial granites; barite, slate, talc and soapstone deposits.

Washington.—Completed report on clays of Washington. List of mineral occurrences in state; magnesite and dolomite resources.

West Virginia.—Reports in progress on brines and limestones; refractory clays.

Wyoming.—Asbestos and chromite deposits; geological occurrence of a new uranium mineral.

GROUND-WATER RESOURCES

Arkansas.—List of water wells, lakes and springs in progress.

Florida.—Report in progress on

ground water resources of west Florida.

Georgia.—Collection of well-log data.

Illinois.—Co-operative work.

Indiana.—Observation wells and semi-monthly measurement of static levels; municipal ground water sources.

Iowa.—Iowa ground-water resources.

Kansas.—Reports in progress on ground-water resources of McPherson formation and of southwestern Kansas.

Maryland.—Collection of well records.

Michigan.—Ground-water surveys in connection with development of municipal, semi-public and private water supplies.

Minnesota.—Water resources of south half and northeast quarter.

Missouri.—Study of drill records; 200 analyses of city water supplies.

Montana.—Continuation of six-year program.

Nebraska.—Reports completed on ground-water resources of Keith County; ground-water survey Scottsbluff County, survey of fluctuations of water table.

New Jersey.—Advising well drillers.

North Carolina.—Well locations.

North Dakota.—Report on fluoride content of ground-waters, as related to occurrence and distribution of mottled enamel. Geophysical water prospecting; study of changes in Dakota artesian basin; test wells established to determine state-wide changes in ground-water level; municipal water survey.

Oklahoma.—Compilation of data on rural water wells; completed preliminary study of Panhandle counties.

Pennsylvania.—Reports on ground-waters of northeastern and south-central parts; ground-waters of north-central part; well gaging.

South Dakota.—Lithologic stratigraphy of Pierre formation completed; study of White River irrigation country.

Virginia.—Report on ground-water resources of northern part; Coastal Plain investigations.

Wyoming.—Underground water resources of Crow Creek Valley and Egbert–Pine Bluffs region; geology of Laramie municipal water supply.

GEOLOGIC AND TOPOGRAPHIC MAPS

Arkansas.—Completed mapping of one quadrangle; began mapping of one quadrangle.

California.—State geological map in press; fossil locality map in preparation.

Georgia.—State geological map in progress.

Illinois.—Topographic maps completed on 13 quadrangles and in progress on 33 quadrangles; geologic map in progress.

Kansas.—Topographic map of one quadrangle (two sheets).

Louisiana.—Maps of 26 quadrangles in progress.

Maryland.—New editions of Somerset and Carroll counties topographic maps completed, and Garrett County in progress; geologic map of Frederick County in progress.

Michigan.—Airplane photographic and base mapping survey of four counties; revision of Leverett's surface geology map; isopac map of drift; geologic map completed.

Missouri.—About 4,000 square miles in progress of completion; revision of state geologic map.

Montana.—State geologic map.

Nebraska.—State geologic map; three soil survey maps.

New Jersey.—Revision of topographic maps.

North Carolina.—Mineral location map.

North Dakota.—Topographic map of one quadrangle; geologic map and structure sections.

Oregon.—State geologic map.

Tennessee.—New base maps of 50 counties in progress in co-operation with Tennessee Highway Department, WPA and TVA.

Vermont.—Topographic maps of four quadrangles completed.

Virginia.—Topographic mapping of seven quadrangles completed; in progress on 21 others.

Washington.—Published preliminary geologic map of State; tectonic map of State in progress.

West Virginia.—Completed relief map of State, geologic map of Greenbrier County; soil map and report of Pocahontas County. Geologic map of Ohio, Brooke and Hancock counties in progress.

Wisconsin.—Topographic map of one quadrangle completed. Aerial mapping started in northeastern part in co-operation with Highway Dept.

MISCELLANEOUS

Numerous miscellaneous projects include statistical summaries of mineral production and various WPA projects; study of caves and caverns by Arkansas; study of paleontology and weather and climate of Connecticut; assembling sets of common rocks and minerals to public schools by Kentucky; publication by New Jersey giving bench-mark data; mining laws of Oregon in press; geography of western Tennessee and market circulars on individual minerals; and study of road slips by West Virginia.

RECLAMATION AND IRRIGATION

By John C. Page

Commissioner, U. S. Bureau of Reclamation

IRRIGATION AREA AND PROJECTS

The Bureau of Reclamation was organized as a bureau of the Department of the Interior under the Reclamation Act of June 17, 1902. It is engaged in the investigation, construction and operation of 49 irrigation projects in 16 arid and semi-arid States of the far West. Thirty-seven projects, comprising a present irrigated area of about 1,700,000 acres, are under construction or operation, and the major works aid in serving an additional 1,300,000 acres under private canals purchasing stored water from the Government reservoirs, making a total irrigated area of over 3,000,000 acres. The funds for this work have come from repayments by the water users, from oil leasing and other mineral operations, from the sale of public lands, and from allotments and direct appropriations. The money expended is returned to the fund by graduated payments of settlers. The Bureau has built 19,116 miles of canals, ditches, and drains (including 182,964 canal structures).

CONSTRUCTION RESULTS

There have been constructed 138 storage and diversion dams with an aggregate volume of 37,000,000 cubic yards, including the Boulder Dam (726 feet high), Arizona-Nevada, on the Colorado River, the highest dam in the world; Owyhee Dam (417 feet high), Oregon, on the Owyhee River; Arrowrock Dam (354 feet high), Idaho on the Boise River; and the Elephant Butte Dam (306 feet high), New Mexico, on the Rio Grande. The Bureau has built 297 tunnels, 1,950 miles of road, 159 miles of railroad, 4,367 miles of telephone line, 45 power plants, and 3,912 miles of transmission lines. The construction cost to June 30, 1937, was $437,729,756. This work has involved the excavation of 446,176,000 cubic yards of materials, and the Bureau has used 14,811,000 barrels of cement.

FARMS AND PUBLIC LANDS

Approximately 864,000 persons are living on the 48,773 farms irrigated by the Bureau, and in the project towns and cities. Of the 3,000,000 acres above referred to, 2,900,000 acres were harvested in 1936, producing crops worth more than $136,000,000 or an average of $47.10 per acre. Information in regard to farms available for settlement may be obtained by addressing the Commissioner, Bureau of Reclamation, Department of the Interior, Washington, D.C.

Public land farm units on the several projects are opened for settlement from time to time as canals are extended to make irrigation water available. Under present law, soldiers and sailors of all wars have a preference right of 90 days to enter these farms. The Bureau issues settlement and other booklets. An annual re-

port is also issued, and other publications from time to time, relating to various phases of the work.

ENGINEERING INFORMATION

An engineering library of about 7,000 manuscripts, printed volumes and pamphlets on the subject of irrigation is maintained in the Washington office of the Bureau. This library contains descriptions of the construction and operation of the projects, with numerous photographs and maps, plans, specifications, cost data and results of original experimental investigations, and is available for consultation by those interested. The Bureau maintains also a photographic file of about 75,000 negatives of scenes on the projects from the beginning of construction through the period of settlement and development, and also has available for distribution three motion picture films (16 and 35 mm.) on the subjects of "Boulder Dam," "Grand Coulee Dam," and "Reclamation in the Arid West."

ACREAGE AND FINANCIAL STATISTICS

The area irrigated in 1936 with water from Government works was 3,038,187 acres and a total of 2,935,616 acres in 1935. The area cropped was 2,901,919 acres and a total of 2,861,136 acres in 1935. The total value of crops was $136,502,480 in 1936 compared with a total of $106,781,294 in 1935 and of $100,943,714 in 1934. During the period 1906, when water was first available, to and including 1936, the cumulative value of crops grown on land irrigated from Government works amounted to $2,311,783,242.

Construction payments in cash and credits from power and other sources received during the fiscal year 1937 were $856,837.46, an increase of $457,465.37 compared with the previous year. Payments for operation and maintenance were $1,129,884.80, an increase of $133,769.68 compared with the previous year.

Total payments amounted to $1,986,722.26 compared with $1,395,487.21 in 1936, an increase of $591,235.05. Income to the reclamation fund from all sources during the fiscal year was $6,302,883.09, or $1,464,671.62 more than for the previous year. The operation and maintenance expense for the year was $1,205,874.28, an increase over the previous year of $1,820.84.

Construction work was carried on with funds provided under the National Industrial Recovery and Emergency Relief acts and regularly appropriated funds. Operation and maintenance of the irrigation, drainage, and power systems were carried on with direct appropriations from the reclamation fund, money advanced by the water users' organizations, and revenues from power operations.

The Act of April 14, 1936 extended the provisions of previous acts granting temporary relief to water users on irrigation projects, and only 50 per centum of the construction charges coming due for the year 1936 were required to be paid. This explains the reason for the small construction payments as given under this heading.

RECLAMATION PRODUCTION AND GENERAL BUSINESS

Data collected on a number of reclamation projects during October, 1934 in a special study by the Bureau of Reclamation give a tangible basis for estimating the effect of reclamation production on general business. Records were obtained of the expenditures for purchases outside of the local trade territory by representative farmers, covering a period of seven to ten years. They show that 75 to 80 per cent of the farm income was thus spent on the purchase of commodities produced in the industrial sections of the United States; in other words, only about one-fourth of the farm production income was used for irrigation operation, tax payments, labor and local supplies, while three-fourths went into the general industrial and trade stream. Applying this result to the mean production of all projects where the Bureau of Reclamation is delivering water, including Warren Act projects taken at $100,000,000 per year on the average, it may be concluded that the Bureau is responsible for sending about $75,000,000 each year into the industrial market.

PUBLIC LANDS

By Fred W. Johnson

Commissioner of the General Land Office

CONSERVATION UNDER TAYLOR GRAZING ACT

Since the passage of the act of June 28, 1934 (48 Stat. 1269), known as the Taylor Grazing Act, as amended by the act of June 26, 1936 (49 Stat. 1976), and the withdrawal of the public lands from entry by Executive Orders of Nov. 26, 1934, and Feb. 5, 1935, the work of the General Land Office has undergone a very decided change. Conservation rather than disposals is the dominant note in the administration of the public lands under existing laws. With some exceptions the public lands may now be disposed of only after appropriate classifications.

While formerly the public lands were open range, subject to unrestricted grazing use, more than 110,000,000 acres of such lands have now been included within grazing districts established under the above-mentioned acts, and grazing leases have been issued under the supervision of the General Land Office regulating the grazing use of approximately 5,643,000 acres outside of such grazing districts. Such regulation will tend to prevent overgrazing of the lands and consequent soil deterioration.

In order to secure the more economical administration of the remaining lands both within and outside of grazing districts, the Taylor Grazing Act provides for exchanges of lands with the States and with individuals. The States and individuals making the exchanges will also benefit through the consolidation of their respective holdings. Applications for such exchanges were pending at the close of the fiscal year involving more than 2,375,000 acres of public land.

The area included in original entries, selections, and filings made during the year was 124,530 acres. Many of these entries, selections, and filings were based on applications filed or rights initiated prior to the Executive Order withdrawals of Nov. 26, 1934, and Feb. 5, 1935. The area embraced in final entries, selections, and filings made during the year was 2,026,203 acres, an increase of 88,677 acres over the area included in such entries during the preceding year.

Proposed reports were submitted on 128 Senate and House bills, and necessary orders and instructions have been prepared in connection with 24 bills, public and private, affecting the public lands, which were enacted into law.

UNITED STATES DISTRICT LAND OFFICES

There are 25 United States district land offices at which applications affecting the public lands may be filed. These offices are located as follows:

Alaska
- Anchorage
- Fairbanks
- Nome

Arizona
- Phoenix

California
- Los Angeles
- Sacramento

Colorado
- Denver
- Pueblo

Idaho
- Blackfoot
- Coeur d'Alene

Montana
- Billings
- Great Falls

Nevada
- Carson City

New Mexico
- Las Cruces
- Santa Fe

North Dakota
- Bismarck

Oregon
- Lakeview
- Roseburg
- The Dalles

South Dakota
- Pierre

Utah
- Salt Lake City

Washington
- Spokane

Wyoming
- Buffalo
- Cheyenne
- Evanston

All business relating to the public lands in Alabama, Arkansas, Florida, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Nebraska, Oklahoma, and Wisconsin, is now handled by the General Land Office.

EMERGENCY CONSERVATION WORK

The work of controlling the coal fires that for years have been destroying the irreplaceable Federally owned coal beds in the vicinity of Little Thunder Basin, Wyoming, was resumed on May 9 and continued to Oct. 15, 1936, from two C.C.C. camps located at Gillette, Wyoming, and operated under the jurisdiction of the General Land Office.

The report for the year again shows that not a single lost-time accident has resulted to any enrollee notwithstanding the fact that the work is perhaps the most hazardous carried on by any C.C.C. camp.

During the season work was conducted on 14 different projects, involving 11 separate and distinct underground coal fires, one emergency forest fire, one emergency prairie fire, and a miscellaneous undertaking.

UNAPPROPRIATED PUBLIC LANDS

The area of the unappropriated and unreserved public lands as of June 30, 1934, was approximately 165,695,479 acres, not including Alaska, and not including small areas remaining undisposed of in those States in which the district land offices have been abolished. Of such area 119,341,782 acres were surveyed, and 46,353,697 acres were unsurveyed. The area of the unappropriated and unreserved public lands in Alaska was approximately 346,174,242 acres, of which 2,044,421 acres were surveyed.

The areas which were included in original entries, selections, filings, etc., during the fiscal years 1935, 1936, and 1937, were 2,281,253 acres in the public-land States, and 28,189 acres in Alaska, a total of 2,309,442 No computation has been made showing the areas restored to the public domain during said years through the rejection of applications or the cancellation of entries.

The estimated areas of the unappropriated and unreserved public lands in grazing districts as of June 30, 1937, established under the provisions of the Taylor Grazing Act, are given next page.

LANDS PATENTED WITH MINERAL RESERVATIONS

The following table shows the areas patented during 1937 and the total areas heretofore so patented in which minerals in some form have been reserved to the United States:

	Fiscal Year Acres	Total Reserved Acres
Stockraising act, all minerals reserved	1,419,778	29,113,272
Other acts:		
All mineral reserved	3,782	444,192
Coal only reserved	9,941	10,785,468
Some named mineral reserved	26,035	1,758,386
Totals	1,459,536	42,101,318

CADASTRAL ENGINEERING SERVICE

The Cadastral Engineering Service of the General Land Office is charged with the execution of cadastral surveys and resurveys of the public lands of the United States proper and Alaska, the supervision of mineral surveys for patent, and preparation of the technical and legal record thereof.

During 1937 cadastral survey projects were executed in the field in 22 States and the Territory of Alaska under 227 separate groups, 69 of which in 14 States were of resurveys. In these areas 37,662 linear miles, embracing 6,756,225 acres, were surveyed and resurveyed exclusive of engineering investigations and many types of miscellaneous and special projects not measurable on a quantity basis.

There were accepted and placed on file plats representing 966,057 acres of original surveys of public lands, and in addition, 720,777 acres of lands resurveyed, comprising an

State	Dist. Totals	State Totals
Arizona No. 1	1,505,200	
" " 2	1,315,162	
" " 4	699,887	
		3,520,249
California No. 1	1,294,846	
" " 2	577,308	
		1,872,154
Colorado No. 1	2,099,331	
" " 2	438,673	
" " 3	1,416,870	
" " 4	1,096,194	
" " 6	1,408,252	
		6,459,320
Idaho No. 1	4,181,445	
" " 2	2,093,140	
" " 3	2,219,100	
" " 4	1,090,200	
		9,583,885
Montana No. 1	1,624,235	
" " 2	1,436,536	
" " 3	686,523	
" " 4	144,887	
" " 5	342,689	
		4,234,870
Nevada No. 1	7,984,977	
" " 2	8,827,496	
" " 3	5,178,681	
" " 4	7,740,106	
" " 5	2,411,000	
		32,142,260
New Mexico No. 2	2,327,954	
" " 3	2,692,940	
" " 4	2,437,649	
" " 5	1,110,926	
" " 6	2,533,933	
		11,103,402
Oregon No. 1	90,000	
" " 2	4,960,676	
" " 3	2,785,957	
" " 4	1,717,962	
" " 5	889,945	
" " 6	228,127	
		10,672,667
Utah No. 1	1,186,806	
" " 2	2,868,422	
" " 3	3,424,472	
" " 4	2,065,080	
" " 5	3,774,186	
" " 6	3,541,069	
" " 7	2,584,360	
" " 8	600,719	
		20,045,114
Wyoming No. 1	1,246,181	
" " 2	1,405,800	
" " 3	2,923,976	
" " 4	4,072,436	
" " 5	869,571	
		10,517,964
	Total	110,151,885

aggregate area of 1,686,834 acres.

The wall map of the United States has been revised to show changes since the publication of the 1934 edition. The 1936 edition has been printed and delivered. A revised copy of the large United States map, showing the railroad grants, is being prepared for exhibit purposes in the new Interior museum. Three hundred and thirty-nine miscellaneous maps, plats, diagrams, and tracings were prepared during the year.

RECEIPTS AND EXPENDITURES

The total cash receipts from sales, leases, and other disposals of public lands were $7,333,915.89 and from sales of Indian lands $65,924.05, an aggregate of $7,399,839.94, all of which was deposited in the Treasury. The total expenditure from appropriations made for the conduct of the Office was $1,503,010.23. The excess of receipts over expenditures was $5,896,-829.71. The receipts were the largest in any year since 1927, exceeding the previous year's receipts by $2,205,-540.32.

Receipts from bonuses, royalties, and rentals under laws providing for the leasing rights on the public domain aggregated $5,773,681.89, of which $5,-622,366.18 was received under the Act of February 25, 1920 (41 Stat. 437). The largest receipts under this act were from lands in California, the amount being $3,107,987.77. Wyoming was second with $1,503,743.29.

The amounts received as fees on grazing licenses, by grazing districts and by States, and the receipts for fees and rentals under Section 15 of the Taylor Grazing Act, may be found in the table next page.

Receipts from all sources, aggregating $7,399,839.94, as shown above, were distributed under the law approximately as follows: Reclamation fund, $2,947,045.09; for range improvements in grazing districts, $110,395.92; to public-land States and certain counties within such States, $2,919,241.05; general fund, $1,357,269.83; and to various Indian tribes, $65,924.05.

PATENTS

During the fiscal year 6,279 patents were issued for 2,114,142 acres. Minerals in some form were reserved in 69 per cent of all land patented. Under state grants, 74,420 acres were certified to States as indemnity school selections and as quantity selections under grants for specific purposes.

	Fees on licenses from grazing districts		Fees and rentals under Section 15	State totals
	District	Amount		
Arizona	1	$15,317.95		
	2	4,511.34		
	4	6,462.75		
		$26,292.04	$12,637.44	$38,929.48
California	1	$4,437.04		
	2	13,101.21		
		$17,538.25	2,637.09	20,175.34
Colorado	1	$17,854.65		
	2	3,002.85		
	3	13,056.83		
	4	7,741.83		
	6	8,157.70		
		$49,813.86	$1,748.36	$51,562.22
Idaho	1	$20,871.70	$2,600.27	$23,471.97
Montana	4	$ 764.31		
	5	11.00		
		$ 775.31	$10,846.51	$11,621.82
Nevada	1	$30,375.75		
	2	21,140.75		
	3	35.00		
	5	141.90		
		$51,693.40	—	$51,693.40
New Mexico	3	$12,215.93		
	4	12,044.99		
	5	4,101.06		
	6	19,780.56		
		$48,142.54	$ 3,801.70	$51,944.24
Oregon	1	$ 2,325.80		
	2	15,842.73		
	3	16,646.14		
	4	13,902.66		
	5	5,163.96		
	6	5,495.90		
		$59,377.19	$ 5,053.13	$64,430.32
South Dakota		—	$ 113.01	$ 113.01
Utah	1	$ 7,307.34		
	2	22,345.53		
	3	32,877.97		
	4	13,517.82		
	5	15,960.66		
	6	18,308.89		
	7	16,536.12		
	8	14,618.25		
		$141,472.58	—	$141,472.58
Washington		—	$1,849.41	$1,849.41
Wyoming	1	$19,548.91		
	2	470.90		
	3	3,760.19		
		$23,780.00	$48,242.65	$72,022.65
Grand total		$439,756.87	$89,529.57	$529,286.44

PUBLIC UTILITIES

By John Bauer

Director, American Public Utilities Bureau

GENERAL

Public utility developments in 1937 involved primarily litigation rather than legislation or other phases of regulation. There was, however, considerable progress in construction and financing by private companies and by the Federal agencies, including the TVA and other hydro-electric projects, and there was forceful advancement in rural electrification.

PWA GRANTS AND LOANS

During the earlier years of the Roosevelt Administration substantial impetus was given to the extension of municipal ownership, especially in the electric field. Under the PWA administration Federal grants and loans were extended to municipalities for new electric generating plants and distribution systems as a part of the national program to furnish employment in constructive developments.

Numerous allotments were made, but they have been tied up mostly by litigation. Private power interests attacked the legality of the grants and loans as exceeding the power of the Federal Government, and as going beyond the right of municipalities to compete with existing private utility services. Injunctions were extensively granted, and the points at issue were carried to the Supreme Court of the United States.

The Supreme Court, on Jan. 3, 1938, passed upon the principal cases and in general sustained the rights of municipalities to compete with private companies in the establishment of municipally owned and operated utility systems, and by implication validated the government's right to assist in financing. It confirmed the decree of the lower court holding that private power companies have no right to challenge the action of the government. While municipal competition might frustrate the complainants' hopes of profitable investment, it would not violate any legal right. The decision was heralded by the PWA administrator as a complete victory for the public, and immediately released funds for municipal construction to the extent of about $150,000,000.

REGULATORY LEGISLATION

In the field of regulation, discussion of basic difficulties in rate-making and its administration has continued, and in the case of Pennsylvania led to new legislation calculated to produce more vigorous and effective regulation. A new regulatory statute was enacted and a new commission created.

The new law contains two principal points of apparent advancement. First, in rate inquiries instituted by the Commission, the burden of proof is placed upon the companies in cases involving reduction as well as increases in rates. This relieves the burden placed both upon the Commission or upon other representatives of the public. Second, the Commission is authorized to institute a sliding scale system of rate adjustments. The statute, however, does not provide for the underlying factual basis through which systematic rate adjustments can be carried out without involving questions of valuation and other matters which generally complicate and tend to deadlock rate-making procedure.

PACIFIC GAS AND ELECTRIC CASE

For general simplification of rate control, an important case was decided by the Supreme Court on the same day with the validation of the PWA grants and loans to municipalities for utility construction. It involved a 1933 rate order of the California Railroad Commission requiring a reduction of $1,745,000 in gas rates charged by the Pacific Gas

and Electric Company. This order was attacked by the company in the Federal court on the ground of confiscation, particularly because the Commission had refused to consider evidence on the reproduction cost of the properties and so had failed to conform to the procedure legally required to fix reasonable rates. The lower Federal court enjoined the rates because due legal procedure had not been followed in determining the fair value of the properties, but it did not find that the rates were actually confiscatory.

The case was appealed to the Supreme Court primarily on the ground that the lower court had not made a factual finding on confiscation. The Commission contended that the court's basic function was to pass on the facts of confiscation, and that it was not concerned with procedure through which the rates had been fixed. This position was generally sustained by the Supreme Court, and the case was remanded back for further proceedings in conformity with the opinion.

This decision was rendered by a divided court. Mr. Justice Butler wrote a sharp dissenting opinion, joined in by Mr. Justice McReynolds, claiming that the majority was reversing the previously established position of the Court. In earlier cases the majority opinions seemed to hold that in fixing reasonable rates the procedure before commissions must conform to the legal standards of fair value, and that a rate order may be declared invalid because of failure to conform with procedure, without regard to the basic fact of confiscation. Whatever the implications of the earlier opinions may have been the new decision apparently restricts the action of the courts to the finding of confiscation and prevents the enjoining of commission orders on pure procedural grounds.

If this interpretation is correct, the decision may have material significance in freeing the commissions from rigid formal standards, especially as to evidence and findings on reproduction cost appraisals. Hereafter, apparently, the commissions will be free to fix reasonable rates without conforming to any particular legal procedure. They may consider records of investments, operating costs and other matters, and fix rates which they deem reasonable without subjecting themselves to cumbersome, time-consuming and costly hearings. If the rates thus fixed in any instance are then regarded by the company as confiscatory, its recourse will be to the appropriate court which must make a finding as to the actuality of confiscation before it can enjoin the order. In such judicial inquiry, the regular legal standards would apply, except that the burden of proof with respect to confiscation would rest upon the complainant. The commissions would thus be largely released from their quasi-judicial function, and would be able to deal much more expeditiously with needed rate adjustments. They would act primarily in the position of intelligent legislation without the restriction of judicial procedure.

PRUDENT INVESTMENT RATE BASE

An interesting incident in the particular Pacific Gas and Electric case was the intervention before the Supreme Court by the Federal Power Commission which, under the 1935 Federal statute, has extensive responsibilities of rate-making with respect to interstate movements of electric power.

The Commission urged the Supreme Court to shift its position on the fair value rule which, as developed through a long series of cases, requires, among other factors, the consideration of the reproduction cost of the properties used in public service at the time of the rate inquiry. It is this particular phase of valuation which has caused the greatest obstruction to public rate control, especially when the commissions themselves were compelled to follow procedurally the fair value standard.

The Federal Power Commission in its intervening brief urged the adoption of so-called prudent investment or reasonable actual construc-

tion cost of existing properties in place of reproduction cost. With reasonable actual cost as the standard, valuation procedure could be brought within systematic accounting control, without involving re-appraisal and its consequent clogging of procedure at every important effort to readjust rates. Through a definite accounting rate base, the administration of rate-making would be greatly simplified, while with appraisal under the fair value rule public rate control is practically an unmanageable undertaking.

This special point of appeal by the Federal Power Commission was not passed upon by the Supreme Court. The legal content of fair value thus remains unchanged except that the commissions may no longer be strangled by procedure, and the difficulties of determination are shifted upon the courts. In addition, Chief Justice Hughes in the majority opinion used the following language, which may indicate forbearance toward actual cost and reduce insistence upon reproduction cost as a vital factor in the determination of fair value:

"While the Court has frequently declared that 'in order to determine present value, the cost of reproducing the property is a relevant fact which should have appropriate consideration,' we have been careful to point out that 'the Court has not decided that the cost of reproduction furnishes an exclusive test,' and in that relation we have 'emphasized the danger in resting conclusions upon estimates of a conjectural character.' *Los Angeles Gas Company* v. *Railroad Commission*, supra, p. 307. And in the *Los Angeles* case, with the evidence before us which had been taken by the Commission and by the District Court, we held that on that evidence it did not appear 'to be unfair to the Company, in fixing rates for the future, to take the historical cost as found by the Commission as evidence of the value of the Company's structural property at the time of the rate order.' *Id.*, p. 309. In the instant case we cannot say that the Commission in taking historical cost as the rate base was making a finding without evidence and therefore arbitrary."

HOLDING COMPANY ACT LITIGATION

Besides the above important decisions by the Supreme Court with bearing upon future public utility developments and procedure, two other matters are under litigation, and both will doubtless go to the Supreme Court for final decision. The one has to do with the 1935 Federal holding company act under which interstate utility systems are required to register with the Securities and Exchange Commission, which is charged with the duty to simplify the holding company structures and to bring about integration of properties within the control of a holding company group.

The Electric Bond and Share Company, along with other leading holding company systems, has resisted the registration feature of the 1935 act on grounds of alleged unconstitutionality. This particular part of the holding company act was sustained by the lower Federal court, and has been received for final adjudication by the Supreme Court.

Even if its decision should be adverse to the Securities and Exchange Commission, this body would still have the remaining powers and duties provided in the 1935 act. The issues as to its constitutional power to impose simplification of corporate structures and to bring about integration of properties will arise only as positive action is undertaken within the specific provisions of the act.

THE TVA ISSUES

The second case involves the constitutional right of the Federal Government, through the Tennessee Valley Authority, to develop hydro-electric projects and sell electricity which competes with privately produced power. The issue is now before the Federal court. The final decision will doubtless go to the Supreme Court. While the decision naturally

is problematical, the PWA decision indicates favorable outcome for the Government.

Apart from the litigation of TVA legal rights, there has been extensive discussion as to desirable relations and co-operation between the TVA and the private companies operating generally within nearby territory; the same questions of policy relate to other governmental projects. Apparently there has been substantial disagreement within the TVA directorate itself. The chairman has sponsored a co-operative policy through which the TVA and privately produced electric energy would be pooled and distributed generally by the private companies. The other two directors, however, have maintained a more vigorous governmental perspective with the purpose of conveying the benefits of low cost hydro power to the public at large. The basic difficulty has been in reaching a satisfactory basis, really fair to the public, in any arrangement with the private companies. This again involves questions of valuation and rate-making.

These matters of policy have been brought to the President, and have been the subject of discussion between him and high utility officials. Nominally considerable concessions have been indicated by some of the utility leaders, notably by Wendell L. Willkie, president of the Commonwealth and Southern Corporation. In a memorandum to the President on Nov. 30, 1937, Mr. Willkie expressed willingness to adopt prudent investment for the purpose of private utility valuation so far as future property expenditures are concerned, but he held that the existing fair value rule should be applied to present properties. He urged also that Federal grants and loans to municipalities for construction of municipal electric systems be discontinued and that municipalities seeking to establish their own distribution systems should be required to purchase the existing privately owned properties, including a fair proportion of existing generating and transmission plant at a value fixed by a fair tribunal.

While Mr. Willkie's suggestions cannot possibly lead to a direct agreement and definite policy on the part of the Government, they indicate realization that under existing regulatory laws and procedure satisfactory conditions between the public and the private companies are extremely difficult to attain. What is basically necessary is fundamental reconstruction of law relating to public utility regulation, with establishment of definite administrative standards and effective machinery of control.

Mr. Willkie's statements may be taken as an indication that the private companies may hereafter be less opposed to sorely needed revision than in the past. They furnish, perhaps, a starting point of ideas for proper re-writing of regulatory statutes and establishing satisfactory administration. These are the fundamentals which must be properly embodied in national and state policies before reasonably satisfactory relations between the public and private utilities can be attained.

WATER SUPPLY

By Robert Spurr Weston

Weston & Sampson, Boston

POLLUTION CONTROL

While there is still sentiment in favor of Federal control of interstate and even intrastate water supplies and the Lonergan and Barkley-Vinson Bills are still prominent on the Congressional calendar, movement in favor of interstate compacts with Federal co-operation but not control is gaining ground. The latest expression of this movement is the proposed statute of Dr. Arthur E.

Morgan, chairman of the T.V.A., to organize interstate water control districts by petition to and under the supervision of the Federal courts. The districts acting through the official board set up by the courts would have full administrative powers.

Because rivers are used for power, navigation, sewage and waste disposal, fisheries and recreation, as well as for water supply, which the Supreme Court has held to be paramount; because protection against floods is greatly needed; and because each river is unique in character and in use of water, it seems as if Dr. Morgan's proposal were a practicable one. Interstate compacts would also be possible under the provisions of the original Barkley-Vinson Bill.

The Federal Government could render great service by finding facts. The States with their sanitary staffs and resident consultants are perfectly competent for design, construction and supervision of operation.

Part of the catchment area (53 sq. mi.) of the new Barkhamstead Reservoir, a part of the additional works for Hartford, Conn., lies within Massachusetts and is one of the factors which led to the appointment of a special commission by the Massachusetts legislature to study legislation which will protect the purity of water supply sources used in Rhode Island and Connecticut but existing in Massachusetts. Representatives from New Hampshire, Rhode Island, New York and Connecticut met recently with this special commission; while neither New Hampshire nor Rhode Island obtain water from Massachusetts, they desire protection in case they should do so at some future time.

ECONOMICS

The danger inherent in cross-connections between water pipes and plumbing fixtures, hospital equipment, etc. is being increasingly recognized. Most high and many other buildings are defective in this respect and dangerous. Vacuum breakers to prevent back siphonage in water-closets are being demanded.

Because few natural waters can qualify as possessing all the characteristics of pure water, some treatment is usually indicated. The economics of a safe water is illustrated by the damage claims arising from an outbreak of typhoid fever in Olean, N.Y. where safe water would have been worth $30,000 per year per 1,000,000 gallons supplied daily.

The esthetics of water supply is also closely connected with economics as shown in some cases where disagreeable although safe waters, are replaced with commercial spring waters, costing the equivalent of from $2,000 to $20,000 per annum for 1,000,000 gallons daily. Even higher savings may accompany the softening of a supply. The elimination of rust stains and deposits in pipes by deferrization or treatment to prevent corrosion is also of economic advantage.

CONSTRUCTION

According to the *Engineering News-Record,* the minimal cost of water works construction during 1937 was $104,449,000 as compared with $92,478,000 in 1936.

The Metropolitan Boston District in Massachusetts is proposing to construct a tunnel 32 miles long and 15 ft. in diameter between the Wachusett Aqueduct and the heart of Boston; it includes a crossing of Boston Harbor to Chelsea. This tunnel, which would be the longest in the world, would reduce the amount of water pumped to from 55% to 4% of that supplied to the District and by-pass certain older supply units where pollution threatens.

The Quabbin Dam which will store 415,000,000,000 gallons is approaching completion with the placement of 2,500,000 cubic yards of earthwork.

The Delaware Aqueduct, a part of the additional water supply for New York City, is getting under way. The project includes the taking of 540 M.G.D. (Million Gallons Daily) of water from Roundout Creek, a tributary of the Hudson River, and from Neversink River and the East Branch, tributaries of the Delaware. These lie on the slopes of the Catskill

Mountains between 80 and 115 miles from the city. The water is soft and of high quality. The project will add more than 50% to the dependable resources of the city, now estimated at 1039 M.G.D. In 1922, it was realized that the Upper Delaware was urgently needed for the supply of New York, but legal, administrative and financial conditions delayed its start. This start is being further delayed by the high wage scale with consequent high bids by contractors, not yet accepted.

Birmingham, Ala. has built an industrial water system consisting of an impounding reservoir, seven miles long, storing 21,000,000,000 gallons; 44 miles of distributing mains; a distributing reservoir holding 65,000,000 gallons of available water; and a plant for adding alkali and chlorine to correct corrosion and disinfect the delivered water. Paterson, N.J. also has a separate industrial system of long standing. Charleston, S.C., has constructed an aqueduct tunnel, 18.6 miles long from the Edisto River, at a cost of $1,000,000—this to bring a new paper mill to Charleston.

The works on the west slope of the Rockies for supplying Denver through the Moffat water tunnel (6.3 mi.), and connections, has been finished. Reinforced concrete pipe (54″) will be used under a pressure head of 400 lbs. Water will be supplied to Denver in 1938.

The 242-mile aqueduct for bringing the waters of the Colorado River across mountains and deserts to the Metropolitan District of Southern California has completed its fourth year of construction. The first part will be in service in 1939. It will cost twice as much as the Boulder Dam. This cost includes pumps for lifting the water for a total of 1,360 feet and for individual lifts as high as 476 feet. For this purpose, pumps of an improved type with an hydraulic efficiency of 92% have been designed. The foundations for the Parker Dam are 235 feet beneath the bed of the Colorado River. The total height of the dam is 320 feet.

The Owens Valley Works, including two dams and an aqueduct (11.3 mi.), supplying Los Angeles, will be ready in 1938. A start has been made in the Central Valley of California of works to bring the water from the more prolific northern areas to meet the deficiences in the San Joaquin Valley and the area near San Francisco. Sacramento, in this area, has just completed two reinforced concrete tower tanks holding 3,000,000 gallons each, the largest capacity yet built. In connection with this struggle against the desert menace, the safeguarding of water supplies is of great importance, and includes checking the upstream migration of salt water which has made some industrial water supplies brackish. Efforts to conserve the water supply of the Pasadena (Cal.) Basin are being made. Twenty-five municipal and corporate takers now cause an overdraft which must be reduced one-third if the basin is to be of permanent value.

Salem, Ore., has replaced its unsatisfactory supply from the Willamette River with one of ground water from the deposits along the Santiam River, 18 miles from the city. At Sheridan, Wyo., a threatened water shortage has been met by a storage reservoir in the mountains, a new aqueduct, distributing reservoir and connections, all costing $800,000. Long Island ground water sources are also being overtaxed, a factor being the increased use of water for air conditioning. Houston, Texas, has just installed the largest ground water system in the United States; 55 M.G.D. are drawn from a relatively small area.

On Sept. 20, the W.P.A.–constructed dam to form a lake near Kansas City failed, evidently because too great a supporting power of the natural foundation for the hydraulic fill was assumed. It emphasizes the importance of thorough preliminary investigation.

The covering of reservoirs for sanitary protection of water supplies is increasing in practice, but studies of evaporation characteristics, made at La Verne, Calif. of a reservoir of limited ventilation indicated that but little water was conserved through the use of roofs.

PUMPING MACHINERY

Improved submerged centrifugal pumps for use in deep wells have been devised; also boiler feed pumps capable of discharging against a pressure of 2,400 lbs. per square inch. Improvements in Diesel engines have increased their range of application among smaller works.

PIPES

Welded is taking the place of riveted steel for supply lines, and pipe cast by the centrifugal process is replacing that cast in fixed molds. Bolted joints with rubber gaskets are coming into use. They avoid the use of jute which has been known to harbor objectionable bacteria and impair water in contact with it.

The use of pure water naturally increases rather than decreases its corrosive effect on distribution systems and house plumbing. Much progress has been made by developing resistant metals, by coating pipes with cement or bituminous compounds, using improved methods for the same, and by treatment of the water with alkali and other chemicals to form protective coatings, or by aeration to remove the corrosive carbon dioxide.

In Germany, waters have been treated by passage through "magnodoublesalt," a roasted Dolomite, which is said to remove the corrosive carbon dioxide automatically and without the formation of chalk deposits. This treatment is an improvement over the passage of water through limestone. A vacuum de-aerator to prevent the tuberculation of the pipe lines supplying a sulfur mine in Louisiana has proved successful.

WATER PURIFICATION

After many years of study, Chicago has planned to spend $4,545,000 in 1938 on the proposed South Side Plant, which will purify one third of the City's supply. The problem is complicated by the high per capita consumption (280 gals.) and the political opposition to the control of waste. It is believed that a reduction of 180 gals. per capita is the practical limit. Already, because of air conditioning, there is at times a shortage of water in the Loop District.

The excellent purification plants at Milwaukee and Denver are now in service, and the plant at Niagara Falls has been doubled. Many smaller plants have been reported, among them those at Covington, Ky., Augusta, Ga., and Danbury, Conn. Much interest is being shown in the plant at Hammond, Ind., which is treating a highly polluted and disagreeable water with remarkable success.

Improvements in methods of treatment, while not striking, continue. Baylis at Chicago has found the addition of sodium silicate useful for coagulation, and salts of titanium have been found effective for color removal. Improved devices for sedimentation in connection with water softening have been introduced at Springfield, Ill., and porous plates for filter underdrains are being introduced.

Among the new deferrization plants, the one at Norwood, Mass., employing upward flow contact beds, is of unusual design; while the plant at Lincoln, Neb., whose water contains more manganese than iron, is removing successfully the former troublesome element by aeration and contact.

Increased attention is being given to the cleaning of filter sand, surface washing devices receiving favorable consideration. The filtering of water through granular carbon has been reported effective at Oshkosh, Wis. and other places. Granular anthracite, called "Anthrafilt," is being used successfully in place of filter sand.

The use of circular steel structures for water purification plants at Burnt Mills, Md. has been followed by similar construction at Bristol, Conn., St. Petersburg, Fla., and other places. The first cost of these structures is less than for rectangular concrete ones; they have certain other advantages.

The zeolite or exchange process of softening is growing in favor. New plants at Sarasota, Fla., Bicknell, Ind., New Madison, O., Palatine, N.Y. and Belleville, Tex., are being placed

in service. "Hydrogen zeolite" has been introduced for the removal of sodium.

Santa Barbara, Calif. has just completed an eight M.G.D. plant for treating a turbid water having an average hardness of 480 p.p.m. The lime-soda process with coagulation and re-carbonation is used. The plant cost $28,000 per 1,000,000 gallons daily capacity. The Metropolitan District of Southern California is considering water softening, and many smaller plants are under consideration.

Fluorine in water often causes the irreparable defect of mottled enamel in human teeth, particularly in certain mid-western and southwestern States. The Arizona Agricultural Experiment Station has found that specially prepared bone will remove this damaging element effectively and economically. It may also be removed by treatment with tri-calcium phosphate.

CONSUMPTION

The low ebb of water consumption occurred during 1933, and a definite upward trend was resumed in October of that year. This is affected of course by metering, a political issue in Chicago and some other cities. Careful study of the water supply resources of Northern New Jersey indicates a shortage in 1946–8. This is serious because major works require at least ten years for legislation, planning and construction.

Recently, the rapid introduction of air conditioning requiring water for cooling and humidifying has presented another problem to water authorities. In some cities in the arid regions, the summer consumption has doubled. However, the General Electric Company has announced that the increase need not amount to more than 1% if consumers will use cooling towers and evaporating condensers to conserve the water. These increase the cost of installation. In some cases, as on Long Island, N.Y., the water used for air conditioning is returned to the ground and re-pumped for use. A rise in water temperature follows this practice.

GOVERNMENT CONTROL AND REGULATION

Pennsylvania has assumed ownership of all unappropriated water which in the future will be assigned by the Commonwealth.

New York has been added to the States in which the licensing of water purification plant operators is required, and Texas has instituted a voluntary system of licensing water works operators and of rating supplies which has impelled cities to strive for and maintain higher grades of water quality. Operators are classified according to ability and an educational program has been arranged. The quality of water supply is graded on a percentage basis and any town supplying water rated at 92% or more may post the fact along the public highway.

It is believed that in spite of loss of administrative morale in some places and the urge toward centralized control in others, the public is insisting more and more firmly upon the proper organization and management of water utilities and the establishment of a salaried executive-group that is not affected by politics and is locally responsible. Many believe also that water boards and commissions should be financially independent of any branch of municipal government and in a position to accumulate from earnings the necessary funds for replacements and improvements.

It is believed that for best results centers of government, both state and Federal, should inspect, advise and specify requirements, leaving planning, financing, construction and management in the hands of local authorities.

STREET AND HIGHWAY TRAFFIC

By Ernest P. Goodrich

Consulting Engineer, New York

MOTOR VEHICLE REGISTRATION

The year 1937 showed a continuation of a growth in motor vehicle registration which has been uninterrupted since the year 1895, except for three years during the depth of the late depression. The estimated total registration for the year was 29,614,000 for both passenger cars and motor trucks. The estimated increase over 1936 was practically five per cent. This percentage has been gradually falling, but is still larger than the rate of increase of the total population of the country, so that the per capita saturation point has not yet quite been reached. City and highway traffic has increased at least in the same proportion as the registration and the estimated total number of accidents at an even larger rate.

TRAFFIC VOLUME AND CASUALTIES

The Director of the Harvard University Bureau of Traffic Research made a prophecy before the Commercial Investment Trust Safety Foundation that at the present rate of increasing automobile use, traffic on important arteries in American cities will reach a point of virtual stagnation within the next year, and that deaths and injuries from automobile accidents will continue to remain at a high level as a result of such congested conditions. It was predicted that the 1937 figures would aggregate 40,000 deaths, 125,000 permanent disabilities, and 1,500,000 lesser injuries. By the middle of the year, it was estimated that motor deaths were 20 per cent above those for 1936. Studies in New Jersey showed a fairly consistent relationship between daily traffic and the number of accidents per million vehicle miles, a gradual rise being indicated up to about 8,500 cars per day on a two-lane road.

DRUNKEN DRIVING

A concerted movement was started among States and cities to eliminate drunken drivers through stricter legislation. More than a dozen States passed special measures concerning drivers' license, and traffic regulation, most of which contain penalties for drunken driving. In Illinois such a driver may lose his license for a whole year. In Kansas the license must be revoked. In Massachusetts it was held by the courts that merely drinking, to a sufficient extent so as to influence the driver perceptibly, was sufficient proof of illegal action. In New York State, even if a drunken driver is acquitted by a jury, his case may be referred to the State Bureau of Motor Vehicles which may revoke his license despite the jury's decision. Two convictions bring prosecution for a felony. Where injury or death results, the driver is permanently barred from securing a license. In Indiana, chemical tests of the driver's breath have been introduced.

Evidence secured in Massachusetts covering 412 night fatalities showed that more drunken pedestrians by almost ⅓ than drunken drivers were victims of automobile accidents.

Rhode Island led all States in low accident ratio per unit of population and gasoline consumption. This low ratio was stated to result from (*a*) the emphasis of the State police upon speed control and compliance with the law; (*b*) reliable and active prosecution by the courts; and (*c*) constant and rigid supervision over drivers by the licensing authority which receives reports of practically all arrests.

During the first half of the year, motor fatalities in New York State numbered 1,282. Ffity per cent occurred in rural territory or in towns of less than 10,000 inhabitants, containing only 22 per cent of the States' population. It was believed by the Commissioner of motor vehicles that these data indicate excessive speed. New York State uses 53 safety patrol cars with the primary purpose of preventing accidents. On the Albany–

Schenectady highway the average speed was reduced from 47 to 35 miles per hour.

CHECKS ON RECKLESS DRIVING

In Baltimore a special device was installed to check the speed of reckless motorists at a sharp blind curve at one point. It includes a detector in the roadway and a system of signal lights and reflecting signs together with lights for warning approaching cars.

In Kansas City automobile speeders were caught and convicted, with 100 per cent pleading guilty, by the use of a portable short-wave two-way radio telephone located at each end of a measured speed course operated by officers in plain clothes, with motorcycle police available to bring back those found to have exceeded the local speed limit.

Apprehension and conviction of traffic law violators have risen materially. In Waterbury, Conn. all 46 hit-and-run cases resulted in convictions.

ACCIDENT PREVENTION

Bicycles have appeared in such numbers as to merit special consideration. Bicycle registration ordinances have been passed in several cities. In some cities red reflectors are required on the rear of the bicycle. During the previous year nearly 800 bicycle riders met death by collision with motor vehicles; half of them being less than 15 years old. More than 14,000 were injured.

The pedestrian and his safety were given increasingly careful study in many communities. According to the Travelers Insurance Company over 40 per cent of automobile fatalities were of pedestrians of which less than ⅓ occurred on rural highways. In Philadelphia study was given to a revision of the time allotted for pedestrians at signalized intersections and many signs were erected and cross-walks were painted.

Studies were made in Washington for "walk" signals for pedestrians and several were installed, but the number of persons who took advantage of them was reported to be exceedingly disappointing.

Fifteen cities have been aided in establishing special police accident investigating squads by the International Association of Chiefs of Police Traffic Safety Division. The results therefrom included a reduction in death rate of a 13.8 per cent average in 1937 compared with 1936, while 12 of the cities secured a 22 per cent reduction.

MOTOR VEHICLE INSPECTION

Compulsory motor vehicle inspection is now required in 12 cities which conduct municipally operated motor vehicle safety inspection stations. Such inspection has been found to reduce motor car accidents, making drivers more safety conscious and keeping all vehicles in a much better mechanical condition. In Des Moines 49 per cent of all cars inspected were rejected on their first trial, most of them for improper brakes and headlights. Other items causing rejection included improper tail lights, brake pedal, hand brake, license plates, horn and vision clearance. In many cities occasion is taken to distribute safety literature, educate the drivers by personal suggestion and acquaint owners with a better knowledge of the law.

The motor vehicle inspection in Portland, Ore. covered 90,000 automobiles and trucks of which 20,000 had defective and unsafe brakes, 10,000 had defective steering apparatus, and 60,000 had other miscellaneous defects. This inspection is reported to have raised materially the standard of workmanship performed by the automobile mechanic and has discouraged, if not entirely eliminated, the practice of juveniles purchasing junk cars for a few dollars and attempting to repair them so as to be usable.

The compulsory motor vehicle inspection in Chicago showed that half of the vehicles in that city had multiple defects. Lack of brake equalization caused over 100,000 rejections in a total of over 500,000. Ninety-one per cent of the total registrations had been inspected during the first six months of the year.

LIGHTING AND TRAFFIC SIGNALS

The fact that night traffic fatalities increased 32 per cent while a four-per cent decrease took place in daytime fatal accidents was an argument for well lighted roads.

Bright lights have also been observed to cut down motorists' speed because the driver who finds himself on a well lighted highway realizes at once that he is in a community even though the outskirts are not built up, and approaches the developed part at a lesser speed and with greater mental alertness.

Improved street lighting was shown to have decreased night accidents by nearly 24 per cent in 22 cities which expended nine cents per capita therefor, while in 20 other cities which decreased the cost of street lighting by nearly 20 cents, the night accidents increased by over seven per cent.

Investigations showed that $1,500,000 had been invested up to the beginning of 1937 in street traffic signals in 147 representative towns having an aggregate population of 5,500,000. This amounts to 27 cents per capita. The average cost of all maintenance, exclusive of electricity, was eight per cent or a little over two cents per capita. The cost of electricity varied from as high as ten cents to practically nothing in cities operating municipal plants. The signalizing of 2,285 intersections released 451 policemen for other duties with an estimated aggregate saving of slightly over $900,000 per year. This is equivalent to a 60 per cent return on the investment.

The *American City Magazine* made a survey with reference to traffic signals on the basis of which it was concluded that (1) they cost little; (2) they are highly regarded by the cities that have them; (3) many cities are inadequately equipped; (4) they release enough policemen from traffic duty practically to pay for the investment. Some cities report a complete cessation of accidents after the installation of the signals. Signals have been installed in at least 225 cities.

The same magazine showed that 22 States throughout the country neither owned nor maintained any traffic signals. In 15 States, 2,248 signals were owned and/or maintained. Ten States did not report. Eight States estimated that 247 signals would be installed during the next two years.

Chicago specified that signals should be made to revert automatically to the flashing type after power failure, until they are retimed.

The Board of Wayne County Road Commissioners in co-operation with two municipal departments devised a traffic signal to take the place of a safety zone. The pedestrian uses a push button on the curb where he waits until the street car approaches. The signal light automatically stops vehicular traffic. This device is especially adapted for narrow streets and at car stops between main intersections, but is not designed for intersections controlled by traffic signals.

Because drivers tend to lose acute consciousness of traffic lights in a familiar neighborhood, changes in signal timing have been suggested to counteract this tendency. The reduction from two minutes to 1½ minutes in New York City is reported to have reduced the accidents by an appreciable percentage, primarily because it required less waiting time on the part of pedestrians.

TRAFFIC SURVEYS

The National Bureau of Casualty and Surety Underwriters published a full explanation of "Traffic Safety Survey Procedure," and a 48-page pamphlet describing the various activities necessary to deal effectively with the community traffic problem and with the rural one. The National Safety Council published the result of a study of the effect of exhaustion and drowsiness on the part of drivers which resulted in traffic accidents. It was estimated that over 2,000 persons were killed and 15,000 people were injured from this cause annually. It also published a monograph on *Engineering for Traffic Safety.* A manual entitled *Play Streets and Their Use for Recreational Programs* (A. S. Barnes & Co.), describes

among other things the work relief program in street play in New York City which covered 23 large centers and 46 small ones serving approximately 8,000 individuals weekly.

A report on a street traffic survey for Minneapolis was published by the City Engineering Department of that city. It describes the work done under Emergency Relief appropriation together with recommendations for street improvements, roadway widenings, standardization of control equipment, the installation of accident prevention measures and other needs. Similar reports were published for Oakland and San Francisco.

The *Proceedings* of the American Society of Civil Engineers contained papers submitted at a symposium held in Pittsburgh on "Increasing the Traffic Capacity and Safety of Thoroughfares" which included much valuable engineering data.

Traffic Institutes for the training of police officers were established in Northwestern University, Rutgers, Pennsylvania State College, University of Tennessee, Purdue and University of Alabama.

TRAFFIC RESEARCH AND STUDIES

The Bureau of Street Traffic Research at Harvard launched a second series of 15 graduate fellowships to make possible a year's intensive training and research in the methods and practices of traffic control.

Joint action by several casualty and insurance Companies provided from eight to 12 fellowships to enable policemen in active service to study street traffic control and automobile accident prevention problems at the Northwestern University Traffic Safety Institute.

The Committee on Traffic Control of the American Public Works Association undertook to have traffic engineers appointed by municipalities, counties and States.

The American Automobile Association promoted driver education in high schools. Twelve colleges and four Indian Service Schools conducted summer sessions for the training of teachers.

TRAFFIC REGULATION

The Michigan Supreme Court upheld as reasonable a traffic regulation which forbade curb service to patrons of abutting stores.

In Washington one-way traffic was indicated by neon signs. A symposium on the painting of traffic lines on pavements developed the general opinion that the best results were obtained by applying a good lacquer with spraying equipment to a thoroughly dry pavement surface in warm weather.

New traffic rules were adopted in New York City which limited speeds to 25 miles an hour except in specific instances, prohibited any turns on red lights except where policemen were on duty or where special markers had been installed, and promulgated other minor regulations.

In order to deal with the large number of vehicles brought to Philadelphia during football games, resort was made to directing traffic from the roof of a high building with marked success.

THE PARKING PROBLEM

The parking problem has continued to increase in importance. The latest regulation is an ordinance requiring theatres and other places of amusement to provide a specific amount of off-street parking space on a ratio to their seating capacity. Riverside, Ill. requires a minimum of 200 square feet parking space for each six seats in any building conducted for moving pictures, vaudeville shows or theatrical entertainments giving regular performances. Such space must be adjacent to the site of the building. San Marino, Cal. requires sufficient parking space to accommodate one automobile for every two seats in the theatre. The zoning ordinance of Los Angeles requires apartment buildings to provide for street parking space on their lots.

Competition became so keen in the open air parking lot business in one city that one firm decided to construct a number of welded steel shelters which would give the customers' cars at least partial protection from

weather extremes. Even before the first shelter was fully completed its value as a method of attracting business became evident.

The problem of the commercial parking space or parking garage in its relation to city, retail centers, theatre districts, industrial plants, railroad and other terminals, and suburban areas, was discussed by various writers in the *American City Magazine*.

The Spokane Hospitality Club and Merchants' Parking Association employed half page newspaper advertising to invite visitors to the city and to indicate where parking space was available.

Roof parking to relieve street overcrowding was planned for department stores in Portland, Ore. and Chicago.

The solution of the parking problem was discussed in the *Rotarian* (October) which foresees "A Decentralization of Industry with Small Airy Communities Gradually Replacing Great Cities" while *Printers' Ink Monthly* (October) suggests parking areas provided by municipalities and by associations, garages incorporated within buildings, encouragement through lower taxation of privately owned parking lots, more attractive mass transportation vehicles, street widening, and the use of parking meters. The *Highway Safety Signal News* commented pointedly on the difficulties experienced by fire departments from the presence of continuous lines of parked vehicles.

On July 16, the parking meter as the practical eliminator of parking abuses, was two years old. Data from 11 cities with an aggregate population of over 1,500,000 ranging in size from 7,600 to 290,000, with 6,842 meters, gave an average of $7.85 per meter per month. Some 50 cities are now using such meters.

The courts variously upheld parking meters in Florida, Massachusetts, Oklahoma and Texas, and ruled adversely against them in Alabama.

TRAILERS

The American Municipal Association studied many phases of the trailer problem, including taxation, police, fire and health requirements, etc.

Four national government associations made a general study of the governmental problems resulting from the rapid increase in the use of the "trailer-home." It was estimated that 400,000 such "homes" would be used by the end of 1937, housing a population of 1,250,000. At least 17 States have enacted laws specifically regulating tourist camps. A large majority of these are outside the corporate limits of cities and village.

Zoning was stated to be one effective method of regulating trailers. A time limit could be fixed within which each trailer should become a dwelling complying with all zoning requirements.

The large increase in the number of automobile trailers on the roads and the difficulties which they have caused have led to the promulgation of several municipal ordinances with special references to the planning and operation of automobile (including trailers) camps or parks. Oakland, Calif., Miami, Fla., Long Beach, Banning, San Diego, Calif., St. Petersburg, Fort Lauderdale, Clearwater, Fla., and Phoenix, Ariz. are examples.

The National Safety Council felt that trailer manufacturers should join in an effort to educate drivers in the safe operation of their vehicles which are often incapable of stopping quickly, are likely to sway considerably and are not properly lighted and provided with sanitary facilities.

TOW-CAR SITUATION

The "tow-car" racket by which automobile wreckers racing to the scene of an automobile accident not only violate speed laws, but victimize persons involved in accidents, brought action in certain cities. In some cases when owners left the hospital they found their automobiles in the hands of garage men who demanded exorbitant fees even though the car had been removed without the owner's consent.

Seattle has an ordinance under

which bonded towing garages are authorized to do police towing of cars involved in accidents by authority of the investigating officer, with a maximum charge of $2.50 for the towing.

The new mayor of Philadelphia abolished the unpopular "towing squad" and instituted a new system of enforcement with a central traffic court as its nucleus. The owner accused by the police of violating the Pennsylvania Motor Vehicle code, who admits his guilt, may pay his fine by mail.

VEHICULAR TUNNELS

A tunnel 3,100 feet long and costing $3,500,000 which saves distance and grades between Sacramento and the San Francisco Bay region, was placed in operation. The tunnel consists of a pair of tubes each 26 feet wide including a sidewalk. Four blowers provide ample fresh air. Careful study was made to determine the proper lighting intensity.

During December the first tube of the new Mid-Town tunnel between Manhattan and New Jersey was opened under the Hudson River.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Planning and Civic Association, 901–3 Union Trust Building, Washington, D.C.

American Public Utilities Bureau, 280 Broadway, New York City.

American Transit Association, 293 Madison Ave., New York City.

American Water Works Assn., 29 W. 39th Street, New York City.

Edison Electric Institute, 420 Lexington Ave., New York City.

International Assn. of Fire Chiefs, Police Headquarters, Philadelphia.

National Electric Light Assn., 420 Lexington Ave., New York City.

National Parks Assn., 1512 H St., N.W., Washington, D.C.

Park Assn. of New York City, Inc., 295 Madison Ave., New York City.

Public Service Commission, State Division, 80 Centre St., New York City.

DIVISION IX

DEFENSE AND ARMAMENT

THE UNITED STATES ARMY

By Robert S. Thomas

Chief Clerk, Historical Section, Army War College

NATIONAL DEFENSE

During 1937, a sensible measure of progress was achieved in bringing the Army to its most efficient peak in peacetime history. At all times, however, the non-aggressive character of the armed force was kept in mind. Types of equipment were improved, personnel was augmented and training methods were perfected, all with the primary objective of maintaining the peace and security of our own country through an adequate national defense. For this, the Regular Army stands as a nucleus, a rallying point for the organization of a citizen army in an emergency. This Regular Army, together with the National Guard, should always be sufficiently large to hold off any invading force long enough to permit the mobilization of a completely adequate fighting machine. Within budgetary limits, emphasis should be placed in the immediate future, according to Secretary of War Woodring, upon achieving a gradual increase in the number of officers and enlisted men and in a speeding up of the program of equipping the present Army with the most modern means of communication, transportation and weapons.

ORGANIZATION

The War Department is the managing agency of the Army. This agency is presided over by the Secretary of War (Harry H. Woodring) and he has two aides—the Assistant Secretary of War (Louis Johnson), and the Chief of Staff (General Malin Craig). Under this combined direction, the General Staff and the various arms and branches of the service operate. The advice and best judgment of the Chiefs of the several arms and branches of the service reach the Secretary of War through the Chief of Staff and the Deputy Chief of Staff (Major General Stanley D. Embick).

The Regular Army is comprehended under the Four-Army Plan by which the following Army Headquarters and command are established: First (Major General Fox Conner) at Boston; Second (Major General Hugh A. Drum) at Chicago; Third (Major General George V. H. Moseley) at Atlanta; and Fourth (Major General George S. Simonds) at San Francisco.

For flexibility in command and control, the United States and its possessions are further divided into Corps Areas and Departments, each in turn commanded by a general officer. First Corps Area (Major General Fox Conner) headquarters, Boston; Second Corps Area (Major General Frank R. McCoy) headquarters, Governors Island, New York; Third Corps Area (Major General Albert J. Bowley) headquarters, Baltimore; Fourth Corps Area (Major General George V. H. Moseley) headquarters, Atlanta; Fifth Corps Area (Major General William E. Cole) headquarters, Columbus, Ohio; Sixth Corps Area (Major General Hugh A. Drum) headquarters, Chicago; Seventh Corps Area (Major General Stanley H. Ford) headquarters, Omaha, Neb.; Eighth Corps Area (Major General Herbert J. Brees) headquarters, San Antonio, Tex.;

Ninth Corps Area (Major General George S. Simonds) headquarters, San Francisco; Hawaiian Department (Major General Andrew Moses) headquarters, Fort Shafter, Territory of Hawaii; Philippine Department (Major General Lucius R. Holbrook) headquarters, Manila; Panama Canal Department (Major General David L. Stone) headquarters, Quarry Heights, Canal Zone, and within this Department, the Atlantic Sector (Brigadier General Frank W. Rowell) and the Pacific Sector (Brigadier General Frederick H. Smith). These areas and departments are further subdivided into tactical divisions and brigades.

ARMY STRENGTH

Need for Expansion.—Demands made upon the Regular Army by reason of the operation of the national defense policy emphasize the necessity for greater strength, both in officers and enlisted men. An expanded Air Corps program, the establishment of additional Reserve Officers' Training Corps units, the need for additional instructors to serve with National Guard units just placed on the active list, all support this viewpoint and were, in part, responsible for the recommendation of General Malin Craig, Chief of Staff, in his last report, that every effort should be made to gain and maintain a Regular Army strength of 14,659 officers and 165,000 enlisted men.

Regular Army.—Commissioned strength on June 30, 1937 was 12,269, an increase of 200 over the preceding year; enlisted strength, 158,626, an increase of 12,800. Authorized commissioned strength was 12,713 but shortage of funds precluded realization of this figure. Likewise, authorized enlisted strength of 165,000 could not be reached. The second increment of 50 officers to be chosen from the Reserve Corps under the Thomason Act for Regular Army duty became part of the commissioned strength during the year. In the Warrant Officers' corps, a roster of eligibles was established from those who stood examination in the preceding year and qualified for appointment.

National Guard.—This component received its expected increase of a second increment of 5,000 officers and men, raising the authorized strength of the National Guard to 200,000 officers and men. The current increase was used to call from inactive to active status essential units, originally included in the development program, approved in 1923.

Organized Reserves.—The strength of this component of the Army consisted on June 30, 1937 of 96,545 officers eligible for active duty and 3,189 enlisted men. The Chief of Staff renewed his recommendation of the previous year for the establishment of an enlisted reserve, a practice followed by other armies of the world. It should be composed of young men who have passed through a period of training in the Regular Army and returned to civil life and should be numerically adequate to (*a*), assure expansion to war strength of Regular Army units called under initial mobilization orders and (*b*), provide enlisted cadres for elements of the Organized Reserves required in earlier stages of expanded mobilization.

TRAINING

Regular Army.—Emphasis was placed on unification of training of the Regular Army, National Guard and Organized Reserves. Training exercises and maneuvers were held for the purpose of testing organizations, tactical doctrines and administrative and supply functions. During the year more Reserve officers were on extended active duty than at any period since the World War. The outstanding training study of the year was that of reorganization and modernization of the infantry division. A tentative divisional organization was tested at Fort Sam Houston, Texas, wherein the former aggregate divisional personnel of 22,000 was cut to 13,500. It is believed that this new division will have greater mobility than the older form and that, by a greater use of automatic weapons, there will not be a great decrease in fire power. Provision of

motor transportation for rapid movement of the smaller division is far simpler than it would be for one of World War strength. Opinion, however, is not yet crystallized within the Army as is evidenced by the statement of Major General Fox Conner to the press on the occasion of his attending the maneuvers at Fort Sam Houston on Oct. 2d. He said: "In my opinion the proposed new infantry division with a tentative manpower of 13,500 at war strength still is too large to make the most efficient combat division. I believe that the division should have a force of not more than 10,000 officers and men when organized at war strength. . . ."

National Guard.—National Guard divisions took part in the maneuvers and command post exercises of the Regular Army, which permitted training in the use of combined arms as well as affording commanders and higher echelons of command. The National Guard's 15-year service school program was carried to completion of its second year, graduating during the two-year period a total of 726 officers and 172 enlisted men.

Organized Reserves.—Of the officer strength of this component 22,595 were on active duty training for periods not exceeding 14 days' duration, and 1,690 for periods in excess of 15 days. In addition to those receiving military training, 6,621 Reserve Officers served with the Civilian Conservation Corps.

ARMAMENT, MOTORIZATION AND EQUIPMENT

Tanks and Aircraft as Auxiliaries.—The role of tanks and aviation in warfare will determine largely the trend of future armament and equipment. During the year, Spain and China afforded testing and proving grounds where observers might study and determine just what are the equipment demands of modern warfare. Certainly neither tanks nor planes in themselves can effect a decision in land operations. As auxiliaries to the Infantry they are indispensable, and it appears that their employment in warfare and the development and production of new equipment for all arms must be predicated on that premise.

Field Artillery.—Active batteries of Cavalry divisions were rearmed with 75mm. howitzers as well as were more than half of those of the Infantry divisions. Sufficient weapons for one battery of new heavy artillery were issued for service use. Modification for high speed transport of weapons of all medium-caliber, active Regular Army batteries was completed, and 1,329 draft, riding and pack animals were secured and distributed throughout this arm of service.

Infantry.—The light tank battalion at Fort Benning, Georgia, was furnished with a full complement of 54 tanks of M 2 type, making possible the testing of changes in unit organization. Under modern conditions, the greater number of motor vehicles required raises problems of maintenance, gasoline supply, and road space. That of gasoline supply was settled by determining upon 5-gallon can units, capable of easy handling by man-power anywhere. To solve the urgent problem of carrying weapons and ammunition on the battlefield, tests are under way to develop a small tractor type commercial vehicle, low in silhouette, unarmored, and capable of rapid movement across country as well as progress at low speeds to accompany the marching of foot troops, such vehicle to be used both for carrying and for towing loads.

Cavalry.—An improved scout car, superior both for combat and reconnaissance work was developed as was also a better type of strictly combat car, possessing improved cross-country mobility and greater cruising radius. A new light machine gun was perfected, one which permits firing rapid single shots, allows quick changing of barrels and is equipped with better sights.

Coast Artillery.—A new type of mobile antiaircraft searchlight was standardized; a new submarine mine system was developed; and there was

perfected a radio-controlled high-speed seacoast target.

Engineers.—Stereoplotting instruments, similar to German multiplex equipment, were bought and assigned to the 29th Engineers and to the Engineer Detachment at Wright Field, Dayton, Ohio. This equipment facilitates rapid delineation of topography and will materially assist the 29th Engineers in its tactical mapping of coastal areas in the Pacific Northwest.

Signal Corps.—Installation was completed of equipment for high speed operation in both directions, (reception and transmission) on Washington–San Francisco; Washington–Sam Houston; Washington–Panama; and San Francisco–Honolulu communications circuits. For high speed transmission only, equipment was installed at Fort McPherson, Georgia; Fort Hays, Ohio; Fort Omaha, Nebraska; Wright Field, Ohio; Langley Field, Virginia; and Chicago, Illinois. A circuit was equipped and put into operation to link Seattle, Washington and Juneau, Alaska. This was made possible by the leasing of equipment from the American Telephone and Telegraph Company.

Air Corps.—Technical equipment tested during the year included the 4-engine Boeing bomber, popularly known as the "Flying Fortress"; a twin-engine attack plane; a Curtiss P-36 and a Northrup A-17 plane; a stratosphere plane built to test pressure cabins and to determine requirements for high altitude flying; an automatic landing device which, through 50 perfect landings, operated without the touch of human hands on the controls; and photographic equipment designed particularly for night, long-range and color photography.

Ordnance Department. — All equipment necessary for production of ordnance was improved. The improvements included development of gun turning and boring lathes, lapping machines for long cylinders, and special machinery for manufacture of fuses and projectiles, and heat treatment furnaces. Production facilities for manufacturing automatic rifles and armor piercing bullets were developed for greater capacity.

ACCOMPLISHMENTS OF ARMY PERSONNEL

Signal Corps.—During river flood conditions in the past year, Signal Corps personnel took an active and commendable part in the supply of equipment for communication purposes. Property valued at approximately $160,000 was promptly supplied, most of it for use near Memphis, Tennessee.

Engineer Corps.—The annual power survey was conducted under a revised directive and, in continental United States, seacoast fortification work was carried on at three important harbors on the Pacific Coast. Additional fixed installations for antiaircraft guns and searchlights were provided and, in overseas projects, construction work was continued in Hawaii and Panama, providing additional antiaircraft and seacoast searchlights, underground ammunition storage facilities, and firing positions for railway and minor caliber guns.

Quartermaster Corps.—The planning of the Sacramento Air Depot, California, including the designing of the structures and utilities therefor, was considered the greatest single accomplishment of the Corps during the year, a project involving a total expenditure of $7,000,000. The principal buildings include a mammoth shop approximately 300,000 square feet in area, with three airplane docks, each of 275 feet span, a storage depot, affording a total floor space of approximately 350,000 square feet, numerous other buildings to house various technical activities, as well as other buildings such as barracks, hospital, administration building and quarters for commissioned and noncommissioned officers. In addition, long runways 150 feet wide with stabilized soil base, water, sewer, electric, gas and sewage disposal systems to complete the development were planned and designed.

Medical Corps.—After two years' experimentation, this Corps has determined that a new typhoid vaccine, developed from a Panama strain

and known as Strain No. 58, has better antigenic and immunizing properties than the Rawling's strain, originally obtained from South Africa. Encouraging results were also obtained in the prevention of pneumonia by the administration of an immunizing substance isolated from pneumococci by Dr. Lloyd Felton of Johns Hopkins University.

Infantry.—To meet the demands of testing the proposed reduced divisional organization, a new type of infantry organization was set up and tested at Fort Sam Houston, Texas. The rifle battalion was constituted with four rifle companies but with no machine gun companies. Heavy machine guns were combined in a fourth, or machine gun battalion, which consisted of three machine gun companies, each of two .30-caliber machine gun platoons, and one .50-caliber platoon. Sections were eliminated from the rifle companies and instead there were established three rifle squads of nine men each and one light machine gun squad of three guns (eight men) each.

Field Artillery.—Special training was given to selected reserve officers in sound and flash ranging at Fort Bragg, North Carolina. Because of an organizational change, meteorological work formerly done by the Signal Corps became the province of each separate arm of the service, according to its own needs. For this duty, there were organized in the Field Artillery arm eight meteorological units. The 1st Battalion, 68th Field Artillery Regiment was expanded into a four-battery battalion.

Air Corps.—The General Headquarters Air Force participated in joint maneuvers with the Navy, involving transfer of units from home stations to the Pacific coast and they also took part in Army maneuvers of ground forces. Demonstrations were likewise put on for the Command and General Staff School at Fort Leavenworth, Kansas; for the West Point military cadets at Langley Field, Virginia; in honor of the American Legion parade in New York City; and in connection with the National Air Races at Cleveland, O. In the training field, stress was placed upon air navigation, both celestial and by dead reckoning, conducting schools at each of the bombing unit headquarters and concluding such navigation courses by long over-water and overland flights. At Randolph and at Kelly Fields, pilot training was offered to the amount of over 300 hours per student for 300 students. Because of legislative authorization for about 500 Reserve Officers to be put on continued active duty for periods of from three to five years, serving with tactical units, it was necessary to double the size of classes at Air Corps training schools. The first of these schools opened in October and enrolled 600 students. To provide equipment and maintenance items for the Air Corps, contracts were entered into with more than 3,000 individuals and manufacturers. Thus are procured necessary Air Corps planes, fuels, lubricants, engines and fabricated materials. More than 500 new airplanes were contracted for during the year and these were, type for type, the equal and, in many cases superior, to those being delivered to tactical units of other leading world air forces. The automatic landing device perfected at Wright Field may well be regarded as the outstanding individual accomplishment in aviation for the year. With no hand touching the controls, planes were brought safely to the ground, engine power was shut off and brakes applied automatically. This, of course, makes possible the safe landing of planes in densest fogs as well as on clear days.

ARMY AMATEUR RADIO SYSTEM

Over 1,200 volunteer operators, using their own equipment, constitute this system with a central control net station in Washington, District of Columbia, and substations in each of the nine Corps Area headquarters. From Washington, D.C., there were conducted 16 national contests for these operators, in addition to many local contests within the smaller areas. During the Ohio-Mississippi floods, many of these radio operators voluntarily left the safety of their homes and carried their own equipment into

the stricken areas for service. The same thing happened in Eugene, Ore. when floods inundated that area. These amateurs worked unceasingly to get through messages for food, medicine, transportation, movement of troops and police, and appeals for rescue workers.

CIVILIAN CONSERVATION CORPS

The War Department continued its administrative functions with respect to the Civilian Conservation Corps. The act approved June 28, 1937, provided for the continuation of that Corps for another three years, with a maximum enrollment of 300,000. The authorized enrolled strength throughout the year was 350,000. The maximum number of authorized work camps operated during the year was 2,109 and the minimum, 1,930.

CONSTRUCTION AND HOUSING

Public Act. No. 394, Seventy-fifth Congress, signed Aug. 26, 1937, approved the expenditure of $25,587,456 to meet the most urgent needs in Army housing. This, of course, was but a small beginning toward the total of $162,000,000 estimated as necessary for such construction. However, its expenditure will do much to alleviate crowded conditions at Army posts and will permit the removal of many temporary buildings built during the World War and designed in some case for a maximum of from two to three years service. They are, for the most part, in dilapidated condition and maintenance costs are excessive. One of the most urgent needs for corrective housing exists with respect to the Air Corps Technical School. The Appropriations Act for 1938 includes provisions for purchase of land at West Point, New York; at Mitchel Field, Long Island, New York; for the Northwest Air Base near Tacoma, Washington; the Ordnance Depot at Camp Stanley, Texas; and the Muroc bombing range in California. Before the end of the fiscal year 1938, the Air Base Depot at Sacramento, California will be completed and additional facilities will be constructed at Albrook Field, Panama; Bolling Field, District of Columbia; and at Hickan Field, Hawaii. The War Department itself continues to be housed among 20 different structures, varying in character from permanent structures to apartment houses and temporary buildings of war-time construction. Some are owned by the Government, others are leased. The need for a central, modern type of building to co-ordinate all activities of the Department under one roof is pressing.

THE PANAMA CANAL

The area of the Canal Zone, including land and water, but not including the water area within the three-mile limit from the Atlantic and Pacific ends, is 552.8 square miles. The area of Gatun Lake, when its surface is at its normal elevation of 85 feet above sea level, is 163.4 square miles. The water area of the Zone, including Madden Lake, which was formed by construction of Madden Dam in 1935, is 190.94 square miles. The Canal is 50.72 statute miles in length from deep water in the Caribbean Sea to deep water in the Pacific Ocean, while the shore to shore length is approximatly 40½ miles. The channel ranges in width from 300 to 1,000 feet and the minimum depth is 41 feet. Average time of passage through the Canal is from seven to eight hours, record passage having been made in four hours, ten minutes. Maximum traffic capacity is estimated at 48 ships of usual size per day, or about 17,000 a year.

Civil population of the Canal Zone for 1937 was 28,707 of whom 8,685 were Americans. Of this population, 2,716 Americans and 4,824 of other nationalities (chiefly Panamanian and other natives of the tropics), were employed by the Panama Canal and the Panama Railroad. The total force employed in June, 1937 was 3,428 on the "Gold Roll" and 10,159 on the "Silver Roll." The gold roll comprises supervisory, technical, higher clerical, and highly skilled mechanical employees while the silver roll carries those engaged in low-paid routine work. At the beginning of the fiscal year 1937, the capital investment of

the Canal stood at $549,874,826.95. As of June 30, 1937, reflecting capital additions made during the year, the capital investment stood at $553,071,770.35. An adjustment was made to reduce capital investment by transfer to operations on account of change in closing date of Canal Construction from June 30, 1921 to July 11, 1920, approved by the President in August, 1937, leaving capital investment as of July 1, 1937 at $539,160,472.92.

Exclusive of interest charges on the investment, the net revenues of the Canal from tolls and other sources amounted to $14,053,945.37 for the fiscal year ended June 30, 1937. Consequently, with respect to the capital investment of $549,874,826.95 as of July 1, 1936, the net revenues of $14,053,945.37 realized from Canal operations during the fiscal year represent a return of 2.56 per cent on the investment.

Of the total number of commercial transits of the Canal during the year ended June 30, 1937, there were 1,670 of the United States; 1,385 British; 674 Norwegian; 332 German; 282 Japanese; 221 Netherland; 189 Danish; 184 Panamanian; 108 Swedish; 100 French; and the remaining 242 were of 21 other nationalities. This made a total number of transits of 5,387. Of these, 2,522 went from the Pacific to the Atlantic with a total of 18,212,743 tons and 2,865 went from the Atlantic to the Pacific with a total of 9,895,632 tons.

The following are the courses presented in the Balboa Junior College during the school year 1936–37, and the number of graduates in each course: Engineering, 7; Commercial, 10; Liberal Arts, 13. These are two-year courses for which full credit is being given by State colleges toward a degree. There were 227 graduates from the two high schools in 1936–37.

MILITARY EDUCATION *

Cavalry School, Fort Riley, Kansas.—Officers' Refresher, 4; Regular Army Officers, 28; Advanced Equitation, 10; National Guard and Organized Reserve Officers, 31; Post of Fort Riley, 12; Noncommissioned Officers, 28; Noncommissioned Officers Advanced Equitation, 14; Horseshoer, 44; Saddler, 24; Refresher, 8; National Guard Noncommissioned Officers, 14.

Field Artillery School, Fort Sill, Oklahoma.—Regular, 65; Communications (Advanced), 8; Motors (Advanced), 8; Horsemanship (Advanced), 3; Refresher, 14; National Guard and Reserve Officers, 98. For Enlisted Men, the following—Sergeant Instructors, 24; Motor Mechanics, 122; Horseshoers, 35; Saddlers, 21; Battery Mechanics, 15; Communications, 72; Cooks and Bakers, 69; Mess Sergeants, 7.

Coast Artillery School, Fort Monroe, Virginia.—For Officers, the following—Regular, 36; Advanced Technical, 6; National Guard and Reserve, Battery, 39. For Enlisted Men, the following—Electrical, 18; Electrical (Automotive), 6; Master Gunners, 7; Radio, 3; Refresher (Electrical), 5; Special Radio Operator, 4; Special Clerical, 25; Electrical (Marine Corps), 3.

Engineer School, Fort Belvoir, Virginia.—For Officers, the following—Regular Army, 27; National Guard (10) and Reserve (20), 30. For Enlisted Men, the following—Surveying, Drafting and Aerial Photographic Mapping, 28; Map Reproduction and Photography, 7; Electrical Motors and Water Purification, 15.

Signal School, Fort Monmouth, New Jersey.—Officers: Regular Army, 9; National Guard, 4; Reserve, 10; Marine Corps, 4. Enlisted Men: Radio Communication, 59; Wire Communication, 64; Meteorological Observers, 15; Meteorological Forecasters, 7; National Guard Instructor, 6; Replacements in the United States, 58; Overseas Replacements, 93. A special course in cryptography was initiated at the University of Illinois in September; it is designed to graduate about five Signal Corps Reserve Officers annually.

Finance School, Washington, District of Columbia.—This school is divided into two departments (*a*) Department of Finance and Account-

* In each case below, the name of the course presented at the various schools will be followed by a figure representing the number of graduates from such course.

ing and (*b*) Department of Property Accounting and Property Auditing. There were 43 graduates from the resident courses for the year, making a total since 1920 of 952. Home Study, 244; Special for officers newly detailed to Finance Department, 10; Special in money and property responsibility for 1937 graduates of the Military Academy, 37; Correspondence course in property accounting and auditing, 12.

Infantry School, Fort Benning, Georgia.—For Officers, the following—Regular, 144; Tank, 33; National Guard and Reserve, 183; National Guard and Reserve, Tank, 18; Refresher, 25. For Enlisted Men, the following—Motor Mechanics, Regular Army, 60; Communications, Regular Army and National Guard, 84.

Army Medical School, Washington, D.C.—For Officers, the following—Basic, 46; Advanced, 4. For Enlisted Men, the following—X-ray Technicians (2 courses), 44; Laboratory Technicians (2 courses), 37.

Army Dental School, Washington, D.C.—For Officers: Advanced, 4. For Enlisted Men, the following—Dental Mechanics (2 courses), 25; Dental Hygiene, 1.

Army Veterinary School, Washington, D.C.—For Officers: Advanced, 7. For Enlisted Men: Technicians, 10.

Medical Field Service School, Carlisle Barracks, Penn.—For Officers, the following—Basic, 75; Advanced, 37; National Guard and Reserve, 15. For Enlisted Men, the following—Regular Army Noncommissioned Officers, 100; National Guard Noncommissioned Officers, 10.

School of Aviation Medicine, Randolph Field, Texas.—For Officers, the following—Basic for Regular Army, 10; Basic for Organized Reserves, 3. For Enlisted Men: Flight Surgeons' Assistant, 6.

Ordnance School, Massachusetts Institute of Technology; Watertown Arsenal, Mass.; Picatinny Arsenal, N.J.; and Aberdeen Proving Ground, Maryland.—Basic, two-year course, 10.

Ordnance Field Service School, Raritan Arsenal, N.J.—Officers: 1 (Philippine Army). For Enlisted Men, the following—Noncommissioned Officers, 25; Specialists, 112.

Chemical Warfare School, Edgewood Arsenal, Maryland.—First Basic, 55; Line and Staff, 28; Navy Line Officers, 37; Field Officers, 59. There was also conducted a special three weeks' Navy Course, attended by 48 Naval officers; because of the brevity of the course, diplomas were not awarded.

Quartermaster Corps School, Philadelphia, Pa.—Officers, 38; Warrant Officers and Enlisted men, 52.

Quartermaster Corps Motor Transport School, Holabird Depot, Baltimore.—Officers: Regular Army, 22; Marine Corps, 1; Japanese Army, 1. National Guard and Reserve Officers, 40. Enlisted Men, 165; Special Refresher, 6.

Quartermaster Schools for Bakers and Cooks.—Officers, 20; Enlisted Men, 1,693.

Air Corps Tactical School, Maxwell Field, Montgomery, Alabama.—58 Air Corps, 9 Regular Army, 3 Marine Corps, and 1 Naval Officer, for a total of 71. Tactical Unit Training, U.S.A. Flying Cadets, 181. For Marine Corps Officers—Airplane Maintenance Engineering, 1; Armament, 1. For Marine Corps Enlisted Men—Armorers, 1; Photography, 1. For Coast Guard Enlisted Men—Parachute Riggers, 4. For Philippine students: Officers—Communications, 1. For Enlisted Men—Radio Repairers and Operators, 1; Photography, 1; Airplane Mechanics, 1.

Air Corps Primary Flying School, Randolph Field, Texas.—53 Regular Army Officers; 135 Flying Cadets; 2 foreign students, for a total of 190.

Air Corps Engineering School, Wright Field, Dayton, O.—Aero Engineering 9.

Air Corps Advanced Flying School, Kelly Field, San Antonio, Texas.—47 Regular Army Officers; 120 Flying Cadets; 3 foreign students, for a total of 170.

Air Corps Technical School, Chanute Field, Rantoul, Ill.—For Officers, the following—Armament, 9;

Communications, 10; Airplane Maintenance Engineering, 14; Photography, 3. For Enlisted Men, the following—Airplane Mechanics, 104; Armorers, 28; Machinists, 30; Parachute Riggers, 21; Photography, 66; Radio Repairers and Operators, 180; Welders, Sheet Metal Workers, 27; Supply and Technical Clerks, 35; Bomb Sight Specialists, 11; Carburetor Specialists, 5; Electrical Specialists, 6; Instrument Specialists, 6; Propeller Specialists, 11. For National Guard Officers—Maintenance Engineering, 7. For National Guard Enlisted Men—Airplane Mechanics, 2; Armorers, 5; Parachute Riggers, 1; Photography, 2; Radio Repairers and Operators, 4.

Command and General Staff School, Fort Leavenworth, Kansas.—233 Regular Army and 2 Marine Corps Officers; from special courses there were graduated 19 National Guard and 23 Reserve Corps Officers.

The Army War College, Fort Humphreys, D.C.—90 Regular Army; 1 Marine Corps; and 4 Navy Officers, for a total of 95. To date, 1,753 officers of the various service components have completed full courses at this school.

The Army Industrial College, Washington, D.C.—49 Regular Army; 7 Navy; and 2 Marine Corps Officers, for a total of 58. To date, 633 officers of the various service components have completed full courses at this school.

United States Military Academy, West Point, N.Y.—From the June, 1937, class of cadets, 298 (including 1 Filipino, 1 Chinese and 1 Siamese) were graduated. Of this number, 293 were commissioned.

Reserve Officers' Training Corps.—

	Units	Enrollment
Senior	226	87,796
Junior	142	57,047

In the 64 Summer Training Camps, there were enrolled 53 basic course students and 6,806 advanced course students. A total of 38 preparatory schools, including high schools, received governmental aid. In the second year advanced course, there was an enrollment total of 5,931 and, to 4,923 graduates from this course, there were offered commissions as Lieutenants in the Officers' Reserve Corps and 925 certificates were granted to graduates under the age of 21 or to those who did not desire appointment in the Reserve at that time.

Citizens' Military Training Camps.—There were 57,073 applications received; of these, 36,259 were ordered to camp; of this number, 33,445 reported to camp (including 103 who reported without orders); these provided an enrollment of 32,522; from this enrollment, 31,239 completed the training. There were 1,081 graduates from the Blue Course.

Civilian Educational Institutions.—A total of 138 commissioned officers of the Regular Army took courses of instruction at civilian institutions in the United States. They were divided among the several arms of the service as follows: Infantry, 3; Cavalry, 1; Field Artillery, 3; Coast Artillery Corps, 2; Air Corps, 14; Corps of Engineers, 28; Signal Corps, 8; Judge Advocate General's Department, 12; Quartermaster Corps, 11; Finance Department, 2; Medical Department, 44; Ordnance Department, 7; Chemical Warfare Service, 2; and Chaplains, 1. Included in this total of 138 are 53 officers taking short courses, varying in duration from 2 days to 4 months.

Foreign Schools.—A total of 28 commissioned officers of the Regular Army attended foreign schools as students: Ecole de Guerre, France, 1; German General Staff School, 2; Surgery Course, Vienna, Austria, 1; Oxford, England, 1; European clinics, 1. Language students—China and Japan, 14; France, 5; Spain, 3.

Foreign Officers.—During the year, 10 officers from foreign armies were in attendance at our Army service schools or were attached to our Army organizations, as follows: Command and General Staff School, 2; Medical Field Service School, 1; Motor Transport School, 1; Air Corps Primary and Advanced Flying Schools, 2; Field Artillery School, 2. Attached to 6th Cavalry Regiment, 1, and to the 2d Signal Company, 1. By

countries, the foreign officers represented were: China, 3; Colombia, 1; Japan, 2; Mexico, 2; and Turkey, 2.

MILITARY DECORATIONS AND MEDALS AWARDED TO AMERICAN SOLDIERS

Decorations	Awards during Fiscal Year		Total to June 30, 1937
	Medal	Oak-Leaf Cluster	
Congressional Medal of Honor			1,825
Distinguished Service Cross	13		6,478
Distinguished Service Medal[1]			2,128
Silver Star	492	67	11,105
Purple Heart	2,682	200	63,450
Soldier's Medal	31		193
Distinguished Flying Cross	11		87
French Fourragere	48		2,539

[1] Reduced from last year's total by reason of award of distinguished service cross which cancels previous award of distinguished service medal.

Service Medals	Awards during Fiscal Year	Total to June 30, 1937
Civl War Campaign	178	2,214
Indian Campaign	15	2,258
Spanish Campaign	189	10,324
Philippines Congressional	39	6,757
Spanish War Service	373	26,160
Philippine Campaign	311	38,085
Army of Cuban Occupation	174	7,053
Puerto Rican Occupation	78	1,520
China Campaign	13	1,865
Army of Cuban Pacification	5	6,441
Mexican Service	23	16,938
Mexican Border Service	236	40,729
Victory (World War)	3,067	1,306,301

During the past fiscal year, the War Department approved 40 applications for the issuance of the Yangtze Service Medal (Navy), bringing the total of such approvals for Army personnel up to 647.

GENERAL STATISTICS

Inspector General's Department.—A total of 1,483 inspections were made, 349 involving posts, depots, arsenals and transports; 322 investigations of specific irregularities; and 812 involving disbursing accounts.

National Guard.—This component served throughout the country in connection with flood disasters, civil disturbances, and other emergencies. Of the 17,775 motor vehicles necessary for minimum peacetime training, 50 per cent have been procured and issued; Baker Board recommendations as to Air Corps squadron equipment were brought up to full requirements for the year. Two modern tanks were issued to each active tank company; two scout cars to each Cavalry regiment and two prime movers (4-Ton, 6 × 6 trucks) for each 155mm. howitzer battery. For high speed towing, two 155mm. gun carriages per battery have been adopted. However, considerable shortages exist in modern antiaircraft armament.

Judge Advocate General's Department.—There were 2,223 persons tried by general court-martial; 2,065 convictions and 158 acquittals resulted. There were prepared 1,071 formal written opinions concerning the making or operation of contracts; 1,084 opinions were rendered pertaining to contractors' bonds and claims; 588 opinions were given concerning Army organization and administration. The Patent Section, collaborating with the Department of Justice, defended 49 suits, representing claims approximating $307,000,000 and prosecuted 78 patent applications.

Corps of Chaplains.—The Regular Army Chaplains Corps was maintained at its full strength, 125, during the year. In the National Guard there were 230 chaplains and in the Reserve Corps, 1,094. Regular Army chaplains conducted 20,512 services with an attendance total of 1,857,257; marriages performed, 669; baptisms, 1,597; funerals, 2,125. Services for Army personnel by civilian ministers, 3,526 with an attendance total of 291,095. Services by Reserve chaplains on active duty in Civilian Conservation Corps camps, 61,402 with an attendance total of 5,419,551; marriages performed, 121; baptisms, 109; funerals, 190. In the Army Extension Courses, 694 students enrolled and completed 1,059 sub-courses, involving 16,036 study hours.

Finance Department.—This agency, which pays the personnel and bills of the Army, paid in the fiscal year 1937 a total of 2,826,400 vouchers representing an aggregate disbursement of $779,411,946.14, which included expenditures in connection with the Civilian Conservation Corps. There were 2,955,398 commercial invoices handled, providing a means, through discounts taken, of saving $1,256,652.24. Since July, 1919, such savings total $8,976,243.69. Thirty-eight hundred property accounts, audited at least once annually, record the statistics necessary to accounting for property which, exclusive of grounds and buildings, is worth over $2,000,000,000. On June 30, 1937, there were 9,105 active soldier deposits in savings accounts, with a deposit for the year of $2,071,564.57; the amount of annual interest paid on these accounts was $37,246.40. From 1873 to 1937, a total of $77,012,903.83 has been deposited through this Army channel, earning $3,920,902.90 interest. From April, 1933 to June 30, 1937, there were 25,137,984 Civilian Conservation Corps checks drawn; the total paid allottees was $466,452,219.57; the average number of members of the Corps paid monthly was 331,793, and the average number of allottees paid monthly was 309,346.

Signal Corps.—Receipts for the year in the Washington–Alaska Communications System totaled $366,780 for commercial business, an increase of $57,849 over the preceding year. Major outside plant rehabilitation periods (part of a three-year program) were completed for 40 post telephone and target range communication systems; 20 central office plants were similarly rehabilitated, with eight more under way as the year closed; telephone fire alarm systems were installed at six posts, with similar work in progress at three more posts and, at present, there are in operation 145 fixed Army stations in the Army communications system. Since its inception in 1922, the War Department radio system has transmitted 160,000,000 words with close to 100 per cent accuracy. For training purposes, the Corps released 22 reels of motion picture film this year.

Medical Corps.—This Corps was increased to bring its commissioned personnel strength to 1,033. The total days of treatment of illness, officers and enlisted men, amounted to 1,835,370 with an average of 17.6 days lost from duty by each case. Professional attention given patients was as follows:

	Days of Treatment
Regular Army, hospital and quarters	1,679,492
Others (1)—hospital	1,858,744
Outpatients	1,473,190
Outpatients—treatments	2,715,325
Physical examinations	521,403
Vaccinations	372,846

(1) These included Veterans' Administration, Soldiers' Home, National Guard, Officers' Reserve Corps, Reserve Officers' Training Corps, C.M.T.C., C.C.C., and other civilians.

There were made 1,588 physical examinations of candidates for West Point, with 580 rejections: 32,293 examinations of C.M.T.C. candidates, with 862 rejections: 813 examinations of candidates for commissions under the Thomason Act, with 75 rejections: examinations of 89 officers recommended for retirement for physical disability, with 86 so found, and similar examinations accomplishing the retirement of 15 warrant officers.

Adjutant General's Department.—Army Extension Courses enrolled a total of 96,621 students, divided as follows: Officers (Regular Army), 1,457; (Reserve), 56,109; (National Guard), 11,811.—Enlisted: (Regular Army), 1,245; (Reserve), 862; (National Guard), 18,729; C.M.T.C. trainees, 2,824; Civilians, 3,584. There were 142,740 subcourses completed requiring 2,248,378 hours of instruction with an average cost per student of $1.74. Army Library Service maintained 151 libraries containing from 500 to 40,000 volumes each, from which there was a recorded circulation last year of approximately 1,450,500 books. For the year there was expended on books, $9,400; on librarians' salaries, $5,100, and on book transportation, $96. Motion Picture Service provided 23,112 programs to audiences totaling 9,818,380; air-conditioning systems were installed in theaters

at 3 Army posts; 19 theaters were equipped with the latest sound-reproducing equipment and on four different occasions, motion picture entertainment was supplied to troops in the field. Hostess Service maintained 11 permanent and 23 temporary hostesses during the period of the summer training camps as aids in the conduct of social activities. World War Records included 948,000 additional documents as new receipts while nearly 674,000 documents were removed from organization files and, of these, 408,800 were refiled as personnel records and 256,000 disposed of as duplicates or unofficial in character. At the close of the year there were in organizational files approximately 114,568,000 documents in which 239,000 searches were conducted over a twelve-month period. Fingerprint identifications to the number of 75,430 were received during the year, 806 for officers and 74,624 for enlisted men. There is now established a fingerprint file totaling 5,659,764 prints, of which 389,717 were made prior to the World War; 3,961,467 during that war; and 1,308,580 since. Verifications of identity were made in the case of 30,597 applicants for certificates in lieu of lost or destroyed discharge certificates and the fingerprints of 15,421 individuals, submitted by various Federal and State agencies, were checked with the result that 6,826 were found to have had Army service. Of 1,371 fingerprints of deceased persons submitted, 459 were identified as having had Army service. Correspondence during the year aggregated 2,831,102 pieces of mail. The largest number received for a single month was 298,258 in May, and the single-day maximum was 25,714. Information Section received 52,713 telephone inquiries and 10,017 personal calls concerning 45,545 individuals and 17,185 of a varied nature.

STRENGTH OF THE REGULAR ARMY BY CORPS AREAS

Corps area, department, or country	July 1936			June 1937		
	Officers	Warrant Officers	Enlisted Men	Officers	Warrant Officers	Enlisted Men
First Corps Area	458	47	4815	477	46	5166
Second Corps Area[1]	1180	86	13867	1227	95	14468
Third Corps Area	1837	106	13280	1906	110	14765
Fourth Corps Area	1218	55	15008	1271	60	17684
Fifth Corps Area	609	51	6461	614	51	7059
Sixth Corps Area	596	44	7247	593	48	7124
Seventh Corps Area	866	48	8988	863	50	9858
Eighth Corps Area	1670	97	25668	1587	100	27956
Ninth Corps Area[2]	1017	100	14877	1081	102	16097
Total in continental U.S.	9451	634	110211	9619	662	120177
Hawaiian Department	720	50	17618	755	49	17712
Panama Canal Department[3]	432	38	12484	392	35	12816
Alaska	11	...	392	12	...	406
Puerto Rico	54	4	808	55	4	865
Philippine Department:						
Regular Army[4]	551	54	4096	492	42	3986
Philippine Scouts[5]	49	...	6394	45	...	6367
China	49	2	626	40	2	703
Miscellaneous[6]	822	...	1258	911	...	1961
Grand Total[7]	12139	782	153887	12321	794	164993

1 Excludes Puerto Rico. 2 Excludes Alaska. 3 Includes Panama civil government.
4 Includes officers on duty with the military adviser to the Commonwealth Government of the Philippine Islands.
5 Includes officers of the Philippine Scouts attending schools or on leave in continental United States.
6 Includes military attaches, personnel on leave and en route to and from overseas garrisons.
7 Includes personnel of the retired list on active duty.

STRENGTH AND LOSSES OF THE REGULAR ARMY OF THE UNITED STATES JUNE 30, 1936, AND JUNE 30, 1937.

Arm of Service	Strength, June 30, 1936		Strength, June 30, 1937		Losses											
					Officers								Warrant Officers			
									Died						Died	
	Officers	Enlisted men	Officers	Enlisted men	Retired	Resigned	Dismissed	Relieved from active duty	Of disease	Of accident	Suicide	Total	Retired	Resigned	Of disease	Total
General Officers of the line	67		65		14				1			15				
General Staff Corps	222		222		1							1				
Army Staffs	3		5													
Adjutant General's Department	92		95		6				1			7				
Inspector General's Department	42		43		1				1			2				
Judge Advocate General's Department	92		94		1				1			2				
Quartermaster Corps	694	9,721	700	9,959	27		2		2			31				
Medical Department	1,293	8,099	1,358	8,371	28	4			4		1	37				
Finance Department	122	442	126	434	2				1			3				
Corps of Engineers	484	5,266	532	5,374	6					1		7				
Ordnance Department	269	2,315	270	2,674	1				3	1		5				
Signal Corps	209	3,244	214	3,477	4	1			1	1		7				
Chemical Warfare Service	82	670	82	782	2							2				
Bureau of Insular Affairs	3		3													
Chaplains	125		125		2				1			3				
Professors, U. S. Military Academy	9		9													
Cavalry	562	9,170	558	10,045	8				2			10				
Field Artillery	936	19,846	948	21,883	5	1			1			7				
Coast Artillery Corps	672	17,122	672	18,584	12	1			2			15				
Infantry	2,271	50,477	2,274	54,707	20	5			7	1		33				
Air Corps	1,223	15,640	1,273	17,299	13	1	1		3	14		32				
Detached List	2,597	4,814	2,601	5,037	43				7	2	1	53				
Total, less Philippine Scouts	12,069	146,826	12,269	158,626	196	13	3		38	20	2	272				

Philippine Scouts:																
Quartermaster Corps	10	432	9	430	1							1				
Medical Department		309		308												
Finance Department		6		6												
Corps of Engineers	4	320	4	321												
Ordnance Department		47		46												
Signal Corps	2	126	1	124	1							1				
Cavalry	2	565	2	566												
Field Artillery	7	983	7	982												
Coast Artillery Corps	9	1,266	9	1,264												
Infantry	15	2,332	13	2,320	2							2				
Total	49	6,386	45	6,367	4							4				
Grand Total	12,118	153,212	12,314	164,993	200	13	3		38	20	2	276				
Warrant Officers:																
Army Mine Planter Service	40		40										1		1	2
Band Leaders	77		78										3	1	1	5
Others	667		676										59		9	68
Total	784		794										63	1	11	75
Retired, on active duty:																
Regular Army	6		6													
Philippine Scouts	1		1					1				1				
Total	7		7					1				1				
Aggregate	12,909	153,212	13,115	164,993	200	13	3	1	38	20	2	277	63	1	11	75

Arm of Service	Losses (*Continued*)																		
	Enlisted Men																		
		Discharged																	
					Fraudulent enlistment						Convenience of Government								
	Retired	Expiration of service	Disability	By sentence of general court-martial	Dependency concealed	Marriage concealed	Disability concealed	Prior service concealed	Criminal record concealed	Alien citizenship concealed	To accept appointment as flying cadet	To accept commission	To accept appointment as Warrant Officer	To enter U. S. Soldiers' Home	To enter U. S. Military Academy	To enter Philippine Military Academy	To reenlist for foreign service or special detail	To enter U. S. Naval Academy	Completion of flying course
General Officers of the line																			
General Staff Corps																			
Army Staffs																			
Adjutant General's Department																			
Inspector General's Department																			
Judge Advocate General's Department																			
Quartermaster Corps	57	2,072	114	69	3	12	2	2	14				14	10			256		
Medical Department	32	1,657	124	58	1	7	11	6	24				3	2	1		238		
Finance Department	2	94	1	1									9				27		
Corps of Engineers	21	823	55	42		5	7	1	12				2	3	1		75		
Ordnance Department	21	490	24	10	1		1		4				6	6			67		
Signal Corps	12	666	18	12		1		1	2		1		1	2	3		86		
Chemical Warfare Service	1	84	9			1		1	1					2	1		16		
Bureau of Insular Affairs																			
Chaplains																			
Professors, U. S. Military Academy																			
Cavalry	54	1,978	105	89		1	12	2	32			1	5		1		182		
Field Artillery	33	3,598	275	164	3	24	30	8	81				1	6	3		432		
Coast Artillery Corps	56	2,025	370	112	5	29	17	15	68	1		1	19	9	28		292	1	
Infantry	153	8,361	829	339	7	66	86	21	174		1		9	23	13		859		
Air Corps	32	3,704	117	41	3	14	14	3	27		1	16	5	16	3		467		231
Detached List	84	1,217	27	10	1	5	1						3	2	3		62		
Total, less Philippine Scouts	558	26,769	2,068	947	24	165	181	60	439	1	3	18	77	81	57		3,059	1	231

Philippine Scouts:																			
Quartermaster Corps	3	90	7	2												1			
Medical Department		89	8																
Finance Department		3																	
Corps of Engineers	2	61																	
Ordnance Department		16	1																
Signal Corps		32	1																
Cavalry	2	106	9	1															
Field Artillery	6	113	4	1															
Coast Artillery Corps	15	277	16	2															
Infantry	12	416	15	2															
Total	40	1,203	61	8															
Grand Total	598	27,972	2,129	955	24	165	181	60	439	1	3	18	77	81	57	1	3,059	1	231
Warrant Officers:																			
Army Mine Planter Service																			
Band Leaders																			
Others																			
Total																			
Retired, on active duty:																			
Regular Army																			
Philippine Scouts																			
Total																			
Aggregate	598	27,972	2,129	955	24	165	181	60	439	1	3	18	77	81	57	1	3,059	1	231

Arm of Service	Losses (*Continued*)																		
	Enlisted Men (*Continued*)																		
	Discharged (*Continued*)								Died										
	Conv. of Gov. (*Continued*)																		
	Disqualified as flying cadet	Returned from foreign service having less than one year to serve	Dependency, Section 29, National Defense Act	Minority	Inaptness or undesirable habits or traits of character	Purchase	Sentenced to imprisonment by Civil Court	Desertion	Of disease	Of accident	Drowned	Suicide	Homicide	Deserted	Dropped, suspended sentence, G. C. M.	Dropped, deserter from Navy	Total	Returned from desertion	
General Officers of the line																			
General Staff Corps																			
Army Staffs																			
Adjutant General's Department																			
Inspector General's Department																			
Judge Advocate General's Department																			
Quartermaster Corps		499	52	4	62	849	32	11	28	10	2	5	1	179	11		4,370	88	
Medical Department		322	46	3	92	654	47	8	19	9	2	3	1	273	10		3,653	97	
Finance Department		4			2	30			2					4	1		177	3	
Corps of Engineers		509	33	5	35	260	23	24	8	6		2		153	4		2,109	64	
Ordnance Department		220	4	1	12	182	5	1	3	4		2	1	46			1,111	20	
Signal Corps		203	20		16	317	5	2	4			2		32	5		1,411	12	
Chemical Warfare Service		67	1		3	30		2		1				13			233	5	
Bureau of Insular Affairs																			
Chaplains																			
Professors, U. S. Military Academy			123	8	51	496	50	17	17	21	1	3	1	731	41		4,032	255	
Cavalry			237	25	147	1,002	89	29	39	30	3	6	1	1,079	115		8,407	341	
Field Artillery		947	105	15	126	766	53	11	24	11	4	4	1	395	19	1	7,320	168	
Coast Artillery Corps		2,737	330	38	560	2,680	194	87	103	54	9	14	5	2,258	222		21,224	753	
Infantry	182	874	59	2	53	1,355	46	8	30	46	2	9	1	199	12		7,572	106	
Air Corps		2	6		16	246	6	5	17	5	1	2		52	1		1,774	44	
Detached List																			
Total, less Philippine Scouts	182	10,113	1,016	101	1,185	8,867	550	205	294	197	24	52	12	5,414	441	1	63,393	1,956	

Philippine Scouts:																		
Quartermaster Corps						5			1	2							111	
Medical Department																	97	
Finance Department																	3	
Corps of Engineers						1			2								66	
Ordnance Department																	17	
Signal Corps						1											34	
Cavalry						1			1	2							122	
Field Artillery					1	4			7								136	
Coast Artillery Corps						7			5	1							323	
Infantry						6			2	1		1	1	1			457	
Total					1	25			18	6		1	1	1			1,366	
Grand Total	182	10,113	1,016	101	1,186	8,892	550	205	312	203	24	53	13	5,415	441	1	64,759	1,956
Warrant Officers:																		
Army Mine Planter Service																		
Band Leaders																		
Others																		
Total																		
Retired, on active duty:																		
Regular Army																		
Philippine Scouts																		
Total																		
Aggregate	182	10,113	1,016	101	1,186	8,892	550	205	312	203	24	53	13	5,415	441	1	64,759	1,956

ADMINISTRATION OF VETERANS AFFAIRS

By Frank T. Hines

Administrator, Veterans Administration

WAR OF 1812

Although over 122 years have elapsed since the close of the War of 1812, there were as of June 30, 1937, two persons receiving pensions on account of service rendered by veterans in that war. They were Mrs. Caroline King of Cheektowaga, N.Y., and Mrs. Anna Hill Morgan of Independence, Ore. Mrs. King, born Oct. 18, 1849, is the widow of Darius King, private, Stephen's Company, New York Militia and receives $50 monthly. Mrs. Morgan was born March 9, 1857, the daughter of John Hill, private, Clark's and McCumber's Companies, New York. She receives $20 monthly, by a special act of Congress.

MEXICAN WAR

The War with Mexico ended May 30, 1848. As of June 30, 1937, there were 221 widows of Mexican War veterans on the pension roll. During the fiscal year 1937, the number on the roll decreased by 26. The disbursements for widows of Mexican War veterans during the fiscal year 1937 totaled $132,776.34 as compared with $154,135.42 during the fiscal year 1936.

INDIAN WARS

On June 30, 1937, pensions were being paid to 3,119 veterans on account of Indian War service, and the disbursements for this purpose amounted to $1,811,536.67 during the fiscal year 1937. This represents a decrease of 394 in the number of veterans on the roll June 30, 1936 and a decrease of $207,693.34 in disbursements as compared with the previous fiscal year. The average age of veterans of Indian Wars receiving pensions at the close of the fiscal year 1937 was 77.

The dependents of 4,590 deceased veterans of Indian Wars were in receipt of pensions on June 30, 1937, and to this class $1,681,906.66 was paid during the fiscal year 1937. This represents a decrease of 58 in the number of cases on June 30, 1936, and a decrease of $48,391.33 in disbursements as compared with the disbursements of the previous fiscal year. The number of dependents receiving pensions as of June 30, 1937 totaled 4,635, classified as follows: widows, 4,546; children, 87; and others, 2.

CIVIL WAR

Out of a total of 2,213,365 that served in this war, which terminated 72 years ago, pensions were being paid to 7,031 veterans on June 30, 1937. This represents a decrease of 2,633 in the number of veterans on June 30, 1936. The disbursements for pensions to veterans of the Civil War during the fiscal year 1937 totaled $8,967,519.20 as compared with $12,298,487.29 for the previous fiscal year, a reduction of $3,330,968.09. The average age of Civil War veterans receiving pensions as of June 30, 1937 was 92.

On June 30, 1937, pensions were being paid to the dependents of 76,131 deceased veterans of the Civil War, as compared with 87,543 as of June 30, 1936, a decrease of 11,412. The disbursements to these dependents during the fiscal year 1937 totaled $37,628,438.76 as compared with $43,338,321.98 for the previous fiscal year, a decrease of $5,709,883.22. The peak in the number on the pension roll was reached in 1912, when the dependents of 304,373 deceased veterans of the Civil War were receiving pensions. As of June 30, 1937 pensions were being paid to 73,761 widows, 1,163 children, and 1,483 other beneficiaries. There were 9,899 cases in which $30 per month was being paid, 57,070 cases in which the beneficiary was in receipt of $40 per month, as provided by law for widows of the attained age of 70 years, and 1,564 cases in which $50 per month was being paid as authorized by law for widows who were wives of soldiers during their service in the Civil War. There were

6,334 cases in which dependents were in receipt of pensions under special acts of Congress; and 1,264 cases in which the dependents were being paid under the general laws because of the death of the veteran from causes due to military service.

SPANISH AMERICAN WAR

The number of veterans on the roll at the close of the fiscal year 1937 was 175,361 as compared with 179,169 on June 30, 1936, a decrease of 3,808, and 173,167 veterans were receiving pensions for disabilities of non-service origin or for age, 2,012 for conditions determined to be the result of service, and 182 were special act cases. The disbursements during the fiscal year 1937 totaled $96,618,456.10 as compared with $91,872,486.05 during the fiscal year 1936, an increase of $4,745,970.05. A study of the age of all Spanish American War veterans shows that 74 per cent are between 55 and 65 years of age.

On June 30, 1937, pensions were being paid to the dependents of 50,292 deceased veterans of the Spanish American War as compared with 48,872 on June 30, 1936, an increase of 1,420. These pensions were being paid to 47,497 widows, 10,137 children and 575 parents, or a total of 58,209 dependents. To these beneficiaries $18,305,668.73 was paid during the fiscal year 1937 as compared with $16,711,619.06 during the fiscal year 1936, an increase of $1,594,049.67. The increase in the number of beneficiaries and in the disbursements to them was due to the increasing death rate among veterans and to the restoration of remarried widows to their former rights.

PEACE TIME PENSIONS

During the fiscal year 1937, the number of veterans on the pension roll as a result of disability incurred in service in time of peace increased from 31,192 to 33,036. Disbursements to this class of veterans during the year totaled $8,947,027.17 as compared with $7,434,834.45 during the fiscal year 1936.

On June 30, 1937, pensions were being paid to the dependents of 8,109 veterans whose death was determined to be the result of disease or injury originating in line of duty in the military or naval service in time of peace. This represents an increase in the pension roll of 604 cases for the fiscal year 1937. The number of dependents as of June 30, 1937 totaled 12,209, divided as follows: widows, 4,040; children, 4,560; and parents, 3,609. During the fiscal year 1937 $2,467,076.75 was paid to dependents of deceased peace time veterans, an increase of $191,446.09 over the amount paid during the fiscal year 1936.

WORLD WAR

Living Veterans: Service Connection.—Compensation was being paid on June 30, 1937 to 336,528 veterans suffering from disabilities directly or presumptively connected with service during the World War, a decrease of 1,239 in the number on the roll June 30, 1936. Of the 336,528 veterans on the roll June 30, 1937, 250,278 were receiving payments under Public No. 141, 73rd Congress, approved March 28, 1934, and 86,250 under Public No. 2, 73rd Congress, approved March 20, 1933. There were 226,493 of the group under Public No. 141 receiving full payments, 21,259 receiving 75 per cent of World War rates as presumptive cases, and 2,526 cases in which part of the payment was made at the full rate and part at 75 per cent of the rate, depending on the service connection of two or more disabilities. The disbursements during the fiscal year 1937 for service connected veterans of the World War totaled $166,417,519.36 as compared with $169,382,036.92 during the fiscal year 1936.

An analysis of the major disabilities for which compensation was being paid to veterans of the World War discloses that neuropsychiatric diseases are the disabling cause in 19.54 per cent of the awards, tuberculosis in 16.92 per cent, and general medical and surgical conditions in 63.54 per cent. The average monthly payments by types based upon the value of awards at the close of the fiscal year 1937 were as follows: neuropsychiatric, $50.61; tuberculosis, $53.92; and gen-

eral medical and surgical, $33.25. The average monthly payments for all types was $40.14. In 54.796 cases in which the veteran was rated on a temporary basis additional compensation was being paid on account of dependents at an average of $7.70 per case per month. On June 30, 1937, there were 2,644 disabled veterans to whom compensation was being paid who reside outside the continental limits of the United States.

Living Veterans: Non-Service Connection.—At the close of the fiscal year 1937 there were 41,594 veterans of the World War receiving pensions for disabilities determined to be not in any way the result of their military or naval service. The present rate for this group is $30 per month unless reduced to $6 per month by reason of receiving institutional care at Government expense and having no dependents. The disbursements for this group of veterans during the fiscal year 1937 totaled $13,758,823.06 as compared with $12,710,374.11 during the previous fiscal year. Of those on the roll, 354, or 0.90 per cent, are over 68 years of age; 788, or 2.01 per cent, are over 62 years of age; and 1,875, or 4.78 per cent, are over 55 years of age.

Emergency Officers.—On June 30, 1937, there were 1,869 emergency officers of the World War entitled to retirement pay as compared with 1,835 on June 30, 1936. Of the 1,869 officers on the roll at the close of the fiscal year, 1,834 were receiving full payment. In the remaining 35 cases, there was a complete forfeiture of retirement pay in 28 cases and a partial forfeiture in seven. Eighteen of the 28 complete forfeitures were due to the application of section 212 of Public No. 212, 73rd Congress, approved June 30, 1932, which provided that in case the salary of any retired officer (except those whose disability was incurred in combat with an enemy of the United States) in the employ of the Federal Government together with the retirement pay exceeds $3,000 per annum, the retirement pay should be reduced or discontinued so that the sum of the two shall not exceed $3,000. The other 10 complete forfeitures were for various reasons, including active duty in the National Guard, the election of the beneficiary to receive disability compensation or because disability compensation is the greater benefit. Of the seven partial forfeitures, three were due to the application of section 12 of Public No. 212 hereinbefore mentioned, and four because the beneficiaries were receiving retirement pay as enlisted men of the Regular Army.

The disbursements for emergency officers' retirement pay during the fiscal year 1937 totaled $3,138,955.75 as compared with $3,283,359.64 during the previous fiscal year. Of the 1,869 officers entitled to retirement pay, 1,834 served in the Army, 23 in the Navy, and 12 in the Marine Corps.

Deceased Veterans: Service Connection.—On June 13, 1937, compensation was being paid to the dependents of 99,032 veterans who died in service or as a result of diseases or injuries incurred either directly or presumptively in service during the World War, as compared with 99,659 on June 30, 1936, a decrease of 627 cases. The disbursements for this purpose totaled $34,301,524.70 during the fiscal year 1937, a decrease of $241,198.87 as compared with the amount paid during the fiscal year 1936. The total dependents of the 99,032 deceased veterans as of June 30, 1937 were classified as follows: 28,244 widows, 38,863 children and 81,121 parents.

An analysis of the principal causes of death of veterans who died as a result of service in the World War and whose dependents are now receiving benefits discloses that 31 per cent died from tuberculosis, 27 per cent from injuries, principally wounds in action, and 24 per cent from diseases of the respiratory system other than tuberculosis. A further study reveals that in 37 per cent of the death cases as of June 30, 1937, death occurred prior to July 2, 1921, the official ending date of the World War. On June 30, 1937, service connected death compensation payments were being made in 6,315 cases where the dependents reside in United States possessions and foreign countries, the annual

value of these awards being $2,027,280.

Deceased Veterans: Non-Service Connection.—Public No. 484, 73rd Congress approved June 28, 1934, provided for the payment of compensation to the dependents of World War veterans who died from causes not connected with service while in receipt of compensation for disability, rated 30 per cent or more, directly connected with service and where death was not due to misconduct. Public No. 844, 74th Congress, approved June 29, 1936, amended Public No. 484 by including the presumptive cases and eliminating the misconduct clause. On June 30, 1937, payments for this type of benefit were being made to the dependents of 5,050 deceased veterans. These dependents were classified as follows: 4,149 widows, and 8,605 children. During the fiscal year 1937, $1,851,982.87 was paid out for this class of beneficiaries as compared with $1,237,550.63 during the fiscal year 1936.

WALTER REED HONOR ROLL

An act was approved February 28, 1929 (Public No. 868, 70th Congress) entitled "An Act to recognize the high public service rendered by Major Walter Reed and those associated with him in the discovery of the cause and means of transmission of yellow fever." This act, in addition to establishing a roll of honor and granting medals, etc, authorized a monthly payment of $125 each to designated persons during the remainder of their lives, in lieu of pensions. As of June 30, 1937, 10 persons were receiving the above payment. A study of the trend from March 31, 1935 to June 30, 1937 shows a loss of only 3 in the 26 month period. During the fiscal year 1937, the disbursements for this type of benefit totaled $15,875 as compared with $17,325 during the fiscal year 1936.

SUMMARY OF TOTAL DISBURSEMENTS

The following table shows the number of living and deceased veterans on the rolls as of June 30, 1937, and the total disbursements during the fiscal year 1937, by wars:

Wars	On Roll June 30	Disbursements Fiscal Year 1937
Grand total	841,947	$396,045,927.12
Living veterans	598,520	299,675,712.31
Deceased veterans	243,427	96,370,214.81
War of 1812		
Deceased veterans	2	840.00
Mexican War		
Deceased veterans	221	132,776.34
Indian Wars	7,709	3,493,443.33
Living veterans	3,119	1,811,536.67
Deceased veterans	4,590	1,681,906.66
Civil War	83,162	46,595,957.96
Living veterans	7,031	8,967,519.20
Deceased veterans	76,131	37,628,438.76
Spanish American War	225,653	114,924,124.83
Living veterans	175,361	96,618,456.10
Deceased veterans	50,292	18,305,668.73
Peace Time	41,145	11,414,103.92
Living veterans	33,036	8,947,027.17
Deceased veterans	8,109	2,467,076.75
World War	484,045	219,468,805.74
Living veterans	379,963	183,315,298.17
Service connected	336,528	166,417,519.36
Non-service connected	41,594	13,758,823.06
Emergency officers	1,841	3,138,955.75
Deceased veterans	104,082	36,153,507.57
Service connected	99,032	34,301,524.70
Non-service connected	5,050	1,851,982.87
Honor Roll—yellow fever	10	15,875.00

HOSPITALIZATION

Remaining under Treatment.—On June 30, 1937, the hospital load of the Veterans' Administration was 46,142 United States veterans, 35 veterans of countries allied with the United States in the World War, 186 employees of the Civilian Conservation Corps and Works Progress Administration, and 53 miscellaneous beneficiaries. Approximately 10.42 per cent of the patients were under treatment for tuberculosis; 56.92 per cent for neuropsychiatric diseases; and 32.66 per cent for general medical and surgical conditions.

An analysis of the 46,142 United States veterans remaining in hospitals shows the following: World War, 41,228; Spanish American War, 2,504; Civil War, 83; Peace Time, 2,255; and other expeditions and occupations, 72. Of this group, 43,206 veterans were in facilities controlled by the Veterans' Administration, 2,154 in other government hospitals, 782 in State or civil institutions. Over 62 per cent of these patients are receiving treatment in facilities located in the State of their reported home address. Of the veterans under hospitalization as of June 30, 1937, 74.37 per cent were receiving treatment for disabilities not of service origin and 25.63 per cent were under treatment for diseases or injuries determined to be of service origin.

Admissions.—During the fiscal year 1937, 141,537 admissions of United States veterans were made to hospitals by the Veterans' Administration, an increase of 17.6 per cent over 1936. This number has been exceeded only once, *i.e.*, in 1932 when 148,662 admissions were made. Since June 7, 1924, 70 per cent of all admissions were for non-service connected disabilities. Admission to the number of 11,080 were authorized for the observation or treatment of pulmonary tuberculosis; 9,806 for psychotic or mental diseases; 12,377 for other neurological disorders; and 108,274 for general medical and surgical conditions, during the fiscal year 1937. In addition to the United States veterans, there were 3,324 admissions of other patients, including 187 allied veterans, 2,779 employees of the Civilian Conservation Corps and Works Progress Administration, and 358 miscellaneous beneficiaries.

Discharges.—During the fiscal year 1937, 192,603 patients were under hospitalization, of whom 188,956 were United States veterans. Of the United States veterans treated, 142,814 were discharged after an average of 82.2 in-patient days. Approximately 77 per cent of the United States veterans discharged during the fiscal year had been under treatment for general medical and surgical conditions, 16 per cent for neuropsychiatric diseases, and seven per cent for tuberculosis.

Deaths.—During the fiscal year 1937, deaths in hospitals totaled 10,051 or 7.04 per cent of the discharges. Of this number, 6,353 or 63.21 per cent occurred among patients under treatment for general conditions; 2,249 or 22.37 per cent for pulmonary tuberculosis; and 1,449 or 14.42 per cent for neuropsychiatric diseases. Of the 6,353 deaths among general patients, approximately 34 per cent were caused by diseases of the circulatory system, including organic heart disease, and 30 per cent by malignant tumors and diseases of the digestive system.

DOMICILIARY CARE

Remaining.—On June 30, 1937, the veteran population reported as present in domiciliary status in facilities under the control and jurisdiction of the Veterans' Administration totaled 11,038, divided as to sex and color as follows: 9,825 white males, 38 white females, and 1,175 colored males. The total membership classified by wars shows that .10 per cent were Civil War veterans; 8.17 per cent were Spanish American War veterans; 86.96 per cent were World War veterans; .27 per cent were veterans of other wars, expeditions and occupations; and 4.50 per cent were of peace time service in the regular establishments. Veterans to the number of 7,792 remaining under domiciliary care were disabled by general medical and surgical conditions; 2,990 by neuropsychiatric disease and 256 by tuberculosis.

In conformity with the act of Aug. 27, 1888, the Federal Government is required to reimburse state and territorial homes for disabled volunteer soldiers at the rate of $120 per year for each person domiciled therein who is eligible for similar care in facilities controlled by the Veterans' Administration. During the fiscal year 1937 an average of 4,932 veterans were cared for in these homes, thereby creating an obligation of approximately $591,840 on the part of the Federal Government.

Admissions and Discharges.—During the fiscal year 1937, 24,820 veterans were admitted for domiciliary care and 27,570 veterans were discharged after an average period of 5⅔ months.

PHYSICAL EXAMINATIONS AND OUT-PATIENT TREATMENTS

During the fiscal year ended June 30, 1937, the field facilities of the Veterans' Administration made a total of 1,079,388 physical examinations for out-patient purposes, a decrease of 14,721 from the number accomplished during the preceding fiscal year. Of the examinations made during the fiscal year 1937, 1,063,001 or 98 per cent were medical, and 16,387 or 2 per cent were dental.

The number of treatments made during the fiscal year 1937 totaled 895,208, which number represents a decrease of 270,887 from the experience during the preceding fiscal year. Of the total treatments, 91 per cent were medical and nine per cent were dental. A total of 120 artificial arms, costing $19,188.81, and 1,010 artificial legs, costing $133,078.54, were supplied beneficiaries during the fiscal year 1937.

DENTAL RELIEF

The value of dental service rendered to beneficiaries in clinics of the Veterans' Administration during the fiscal year 1937, computed on a fee basis, was $1,639,505 as compared with $1,705,912 for the fiscal year 1936. The number of beneficiaries that received dental treatment in clinics during the fiscal year 1937 totaled 59,795, compared with 60,411 during the preceding fiscal year. Of the beneficiaries furnished dental treatment during the fiscal year 1937, 56,684 were in receipt of hospitalization or domiciliary care at the time service was rendered.

ADJUSTED COMPENSATION

As of June 30, 1937, there had been issued 3,785,875 adjusted service certificates, of which number 237,799 had matured on account of death, leaving 3,548,076 certificates in force on the above date. Payments of $50 or less had been made to 175,000 veterans, and cash settlements had been made to the beneficiaries of 143,833 veterans who died in service or before receiving adjusted service certificates.

Immediately following the enactment of the Adjusted Compensation Payment Act, 1936, approved Jan. 27, 1936, forms were made available to holders of adjusted service certificates upon which to make application for settlement. Through co-operation with other government departments, procedure and forms were developed and plans were completed to permit certification of the amount due on adjusted service certificates by all facilities of the Veterans' Administration.

By June 30, 1937, 3,465,519 applications had been received for settlement and of this number 3,465,177 or 99.99 per cent had been certified to the Treasury Department, and the remaining 342 applications were in process of certification. The face value of the adjusted service certificates upon which certification had been completed was $3,400,834,057, while the total amount certified as payable, after deducting outstanding liens, was $1,893,436,231.

GOVERNMENT LIFE (CONVERTED) INSURANCE

At the close of the fiscal year 1937, there were 596,832 Government life (converted) insurance policies in force, aggregating $2,577,982,119 of insurance. During the fiscal year, 22,983 new policies were issued. Premiums from Government life in-

surance, interest from policy loans, interest from all investments, *et cetera*, are deposited to the credit of the Government Life Insurance Fund, from which are paid claims on account of total permanent disability and death, dividends and refunds. This fund is a trust fund kept by the United States Treasury separate and apart from other Government monies and is not available for the payment of administrative costs of operating the insurance activity.

TERM AND AUTOMATIC INSURANCE

On June 30, 1937, monthly installments of term insurance were being paid to 12,040 permanently and totally disabled veterans and to the beneficiaries of 119,966 deceased veterans. An analysis of the disabilities for which term insurance was being paid on June 30, 1937, shows 48.64 per cent of the awards made were for neuropsychiatric diseases, 25.24 per cent for tuberculosis, and 26.18 per cent for general medical and surgical conditions. Payments of automatic insurance (provided for those who were permanently and totally disabled or who died within 120 days after entering service and before making application for term insurance) are being made to 303 veterans and to the beneficiaries of 5,470 deceased veterans.

FINANCE

During the fiscal year 1937, the total net disbursements made by the Veterans' Administration from all appropriations and trust funds (including adjustments on lapsed appropriations) were as follows:

Appropriation	Disbursements
Salaries and expense	$84,643,946.89 [b]
Printing and binding	97,250.41
Hospital and domiciliary facilities and services, Veterans' Administration	8,872,848.73
National Industrial Recovery, Veterans' Administration 1933–37	90,876.63
Army and Navy pensions and miliary and naval compensation	396,045,927.12
Military and Naval Insurance	88,051,778.37
Adjusted service and dependent pay	1,546,168.24
Vocational rehabilitation	–9,022.38 [a]
Military and Naval family allowance	–655.99 [a]
Miscellaneous	13,112.89
Trust Funds	
United States Government life insurance fund	29,396,384.23 [c]
Adjusted service certificates	282,656,226.02 [d]
Army allotments	–466.31 [a]
Navy allotments	–104.04 [a]
General Post fund	459,424.97
Funds due incompetent beneficiaries	143,409.79
Personal funds of patients, Veterans' Administration	1,987,069.51
Total	$893,994,175.08

[a] Credits.

[b] Includes net disbursements of $1,782,928.37 from allotments made to other Government agencies for the care and treatment of Veterans' Administration beneficiaries.

[c] Includes encumbrances.

[d] Represents payments made on adjusted service certificates and amounts reimbursed to the United States Government life insurance fund on account of loans made from that fund on certificates under the provisions of the World War Adjusted Compensation Act as amended, and the Adjusted Compensation Act, 1936.

WATERWAYS AND HARBORS

By Julian L. Schley

Major General, U.S.A.; Chief of Engineers, War Department

INLAND WATERWAYS

Location and Description.—The principal systems are the Great Lakes, together with the New York State Barge Canal and the Hudson River, the Mississippi system, including the Mississippi, Missouri, Ohio, the Illinois Waterway to Chicago, Arkansas and Red; the rivers of the Atlantic Coast including the intracoastal waterway system connecting these rivers; the rivers of the Gulf Coast; an inland waterway from St. Marks River in Florida, via Mobile, New Orleans, and Galveston, down the Texas coast to Corpus Christi, connecting with streams of southern Georgia, Alabama, Mississippi, Louisiana, and Texas, and with the Mississippi River system; the San Joaquin–Sacramento system in California; the Columbia system in the northwest, and the smaller Pacific coast rivers.

Channel Depths.—The Great Lakes have natural deep water navigation except in the connecting channels, these channels having been artificially deepened where necessary to accommodate a draft of 24 feet, the Welland Ship Canal as improved by Canada having a permissible draft of 23.5 feet. The more important harbors accommodate drafts of from 20 to 24 feet. The 12-foot New York State Barge Canal is being deepened to 14 feet from the Hudson River to Oswego. The Atlantic intracoastal waterway system between Trenton on the Delaware River and Wilmington, N.C., on the Cape Fear River has been completed to project depth of not less than 12 feet, and thence to Miami where project depths of 7, 8 and 10 feet have been secured, providing a protected inland passage for vessels of moderate draft. Deepening of the Chespeake and Delaware Canal to 27 feet is now in progress and nearing completion. On the Gulf Coast, projects have been adopted to provide an intracoastal channel 9 and 10 feet deep between St. Marks River, Florida, and Corpus Christi, Texas, and these depths are available from Pensacola to Galveston. The Mississippi has a 9-foot depth from Baton Rouge to St. Louis, and work is being actively prosecuted, and is well advanced by the construction of a series of 26 locks and dams, to secure a 9-foot channel thence to Minneapolis, it being anticipated that the project will be fully available in 1939. On the Illinois Waterway new modern locks and dams are under construction at La Grange and Peoria. Completion of these structures in combination with the 5 locks and dams in the upper waterway will insure a stabilized channel 9 feet in depth when the limited diversion of waters from Lake Michigan, established by Supreme Court decree, becomes effective Dec. 31, 1938.

Waterway Projects.—At the close of the fiscal year 1937, there were substantially 1,000 authorized river and harbor projects in force, active operations having been carried out on 342 of these projects during the year. Total funds made available to the Army Engineers from the several Emergency appropriations for application to river and harbor and flood control projects to Nov. 15, 1937 have amounted to $512,410,395. These funds were in addition to annual appropriations by Congress for the maintenance of existing river and harbor works, and for flood control on the Mississippi and Sacramento Rivers, which for the current fiscal year have totaled $234,614,262; the expenditures of these funds during the year have provided direct employment to approximately 68,000 persons and indirect employment to many thousands more.

Great Lakes.—In addition to maintenance of previously improved channels, the improvement of Great Lakes harbors and channels was carried out during 1937 at Huron Harbor, Lorain

Harbor, Erie Harbor, Black Rock Channel and Tonawanda Harbor, Oswego Harbor, St. Marys River, Straits of Mackinac, St. Clair River, Channels in Lake St. Clair, Detroit River, Alpena Harbor, Green Bay, Kewaunee Harbor, Two Rivers Harbor, Manitowoc Harbor, Port Washington Harbor, Grand Haven Harbor, Leland Harbor, Grays Reef Passage, Grand Marais Harbor, Keweenaw Waterway and Presque Isle Harbor.

Intercoastal Waterways.—Widening and deepening to 32 feet of the Cape Cod Canal proceeded actively, two high level highway bridges and a modern vertical lift railroad bridge having been constructed. The project as a whole is about 54 per cent completed. A continuous protected waterway along the Atlantic Coast from Trenton on the Delaware River to Miami, Fla., 1,435 miles, with depths from seven to 12 feet, is now available, affording a safe passage to vessels of moderate draft, not suited for open sea voyages, bound to and from Florida, as well as vessels engaged in local coastwise trade. Extension of the waterway seven feet deep southerly from Miami 63 miles to Key Largo has been approved. Along the Gulf Coast an inland protected waterway has been completed, or planned, from St. Marks River in Florida to Corpus Christi in Texas, a total distance of about 1,050 miles, the project depth being nine feet at mean low water, except from Mobile Bay to Grand Island Pass where the depth is 10 feet, these depths being maintained for navigation from Pensacola to Galveston. Dredging southwesterly from Galveston to Corpus Christi, about 200 miles, will be undertaken when the rights-of-way are furnished by local interests as required by Congress.

Mississippi River System.—The Mississippi River projects provide for 9-foot navigation from Baton Rouge to Minneapolis, ocean shipping going to Baton Rouge. Of the 26 locks and dams required for canalization above St. Louis, 24 locks and 15 dams have been constructed. On the Tennessee River where the authorized navigation project to Nashville provides for a depth of nine feet, the Joe Wheeler lock was completed, and this dam, together with locks and dams at Pickwick Landing, Guntersville, and Chickamauga, are well advanced by the Tennessee Valley Authority. On the Missouri River a 6-foot channel is available at low water up to St. Joseph, Mo., 83 miles above Kansas City, and thence to Rulo, Neb., at somewhat higher river stages. Channel stabilization to Omaha and Sioux City is in progress. The Fort Peck Dam, embracing the greatest earth-fill dam in the world, is 71 per cent completed, closure of the river having been effected on June 24, 1937. New locks and dams have been placed in commission at Winfield, W. Va., on the Kanawha River, at Gallipolis, Ohio, and at Montgomery Island, Pa., on the Ohio River, replacing 12 old locks and dams built many years ago. Raising of the Emsworth Dam near Pittsburgh to afford better navigation facilities is well advanced, and lock and dam No. 9 on Allegheny River at Rimerton is nearing completion.

Columbia River System.—The Columbia River has been improved to provide a 35-foot channel to Portland, Ore., and Vancouver, Wash. A combination navigation and power dam, with a lock which will permit ocean-going vessels to ascend the Columbia River to The Dalles, is nearing completion at Bonneville, Ore., about 40 miles east of Portland. The dam is equipped with a very complete system of fish ladder devices to facilitate passage of salmon. The present power installation has a capacity of 86,400 K.W.

PORTS AND PORT FACILITIES

Atlantic.—A depth of 40 feet has been provided at ports of primary importance to the Navy, and in addition depths of 45 and 48 feet at New York Harbor up to West 59th Street, and 50 feet through the outer bar at San Francisco have been authorized. Anchorage facilities 40 feet in depth at Boston Harbor have been increased and the channel in the inner harbor to Commonwealth Pier No. 6 for a width of 600 feet has been deepened to 40 feet. Additional deep draft

anchorage space has been provided at New York Harbor. A 25-foot channel in the Delaware River between Philadelphia and Trenton has been completed, and widening of the 30-foot channel in St. Johns River at Jacksonville, Fla., is nearing completion.

Gulf.—On the Gulf Coast improved facilities, aside from maintenance of existing channels, have been provided at Caseys Pass, Anclote River, Homosassa River, La Grange Bayou, Sabine-Neches Waterway, Galveston Harbor, Galveston Channel, Channel to Texas City, Houston Ship Channel, Channel from Aransas Pass to Corpus Christi, and Port Lavaca.

Pacific.—On the Pacific Coast improvements have been provided at San Diego Harbor, Los Angeles Harbor, Middle River, San Francisco Harbor, Redwood Creek, Richmond Harbor, Napa River, Coos Bay, Umpqua River, Columbia River above Celilo Falls, Snake River, Swinomish Slough, at Wrangell, Petersburg and Sitka Harbors, Alaska; and extensive jetty repairs have been carried out at the mouth of the Columbia River and at Grays Harbor, Wash.

Terminal facilities and dock handling equipment at United States ports were extensively improved and enlarged during the calendar year 1936. With a net national waterborne commerce of over 525,000,000 tons, it can be understood why localities in various sections of the country are continuously striving to keep pace with the increasing demands of water transportation. A few of the more important of the facilities which were completed or improved during 1936 are enumerated to illustrate the effort being made efficiently and adequately to handle the increasing waterborne commerce.

NORTH ATLANTIC PORTS

Portland, Me.—A new wharf 300 feet by 10 feet was built, and a berth 300 feet by 75 feet dredged to a depth of 30 feet. Three new oil storage tanks were added, increasing the oil storage capacity of the port by 150,000 gallons.

Gloucester, Mass.—The Department of Public Works of the Commonwealth of Massachusetts began the construction of a fish pier to consist of a solid fill about 900 feet long and 270 feet wide, with a timber platform 40 feet wide, on the north side. Two timber piers 150 feet by 25 feet will be built on the south side. There will also be provided an administration building, fish stalls, a cold storage warehouse, and other necessary facilities for the fishing industry.

Boston.—The Department of Public Works built a concrete slab platform on caisson and steel foundations to replace the former concrete platform on wood piles at Commonwealth Pier No. 5 in South Boston. An oil terminal was completed, with a total storage capacity of 177,000 barrels in nine steel tanks above the ground. Two electric gantry cranes with electro-magnetic lifts were installed at Mystic Wharf No. 51, each having a single lift of about 800 pounds of pig or scrap iron and a loading capacity of about 30 tons per crane hour.

New York.—The Department of Docks completed extensive improvements at the terminals on North River, including the construction of sheds at Piers 25, 32, 45, 90 and 92, and the building of 10 piers in Sheepshead Bay, and partially completed other works. The first foreign trade zone in the United States was opened Feb. 1, 1937, at Stapleton, Staten Island, and now includes five piers and their adjacent slips. The piers vary in length from 1,030 to 1,103 feet and in width from 80 to 210 feet. The slips are of the same general length and their widths varv from 200 to 300 feet. One of the piers is open, while the other four are equipped with corrugated sheet iron and steel frame transit sheds and have two decks. Two of the piers are constructed with aprons on either side, extending throughout the length of the pier, on which are installed two double-track standard-gage tracks and gantry crane tracks. Piers 12 and 13 each have 17 electric gantry cranes varying from one and one-half to five tons capacity, two 20-ton, and three 6-ton elevators. The total area of the four piers is 1,015,210 square feet, 771,000 square feet of which can be devoted to storage. Each of the piers is connected

with the Baltimore and Ohio Railroad. The upland adjacent to the uncovered pier has been inclosed by a barrier for customs protection. Flood lights and sentry houses have also been provided.

SOUTH ATLANTIC PORTS

Norfolk, Va.—An oil storage plant, consisting of a wharf about 300 feet long with a dredged berthing space, four 20,000-barrel and two 10,000-barrel tanks, a pump house, and about two miles of pipe line, was completed on the Southern Branch of Elizabeth River. A ship-building plant was improved by the extension of three piers and the installation of a new marine railway capable of accommodating a 5,000-ton vessel of 60-foot beam. A gantry crane is being constructed at Pier A at Sewall Point for use in handling heavy commodities such as sodium nitrate and ores.

Morehead City, N.C.—The Morehead City Port Commission completed an ocean terminal which has a berthing space of 1,450 linear feet and a transit shed with 416,000 cubic feet of storage space. It is equipped with water and electricity, and has railway and highway connections.

Charleston.—A fertilizer wharf was extended and is connected with a new warehouse by an industrial railway. The warehouse, which is 504 feet long and 120 feet wide, is used principally for receiving and storing nitrate of soda. A seaplane base was constructed by the United States Coast Guard on Cooper River.

Savannah.—The first of three units of a $10,000,000 paper plant was constructed during the year, having a daily capacity of 165 tons of pulp. Oil companies added tanks which increased the storage capacity at the port by about 90,000 barrels.

Miami.—Pier 3 on the southerly side has been widened for the full 1,200 feet of length, Piers 1, 2 and 3 strengthened, work on three new warehouses on Pier 3 started and 2,200 linear feet of steel sheet piling bulkheading constructed at the City Yacht Basin. At a marine repair plant on Miami River a new 1,000-ton marine railway, capable of handling vessels up to 200 feet long, was constructed, and a timber dock 10 feet by 185 feet was completed. A slip 40 feet by 100 feet was dredged to a depth of six feet and provided with a concrete bulkhead.

GULF COAST PORTS

Tampa.—A 4-section drydock was constructed with a combined length of 402 feet, a beam of 117 feet, and a lifting capacity of 10,000 tons. A mooring pier was built, to serve also as a foundation for a gantry crane which has a lifting capacity of 25,000 pounds at a radius of 100 feet. New elevating machinery was added at Phosphate Elevator No. 5, increasing the loading capacity from 400 to 1,344 short tons per hour. A 100-acre combined land and seaplane base was developed at the southeast end of Davis Island.

Mobile.—The Alabama State Docks Commission completed a 500,000 cubic foot cold storage plant.

Houston.—At the turning basin the Harris County Ship Channel Navigation District added a 30-ton and five 15-ton cranes, each equipped with a 55-inch electro-magnet for handling scrap iron; at Clinton work was begun on a cement factory to have a capacity of 300,000 barrels per year; at the Manchester Wharf mechanical suction facilities were added for unloading grain from ship to bins, and the terminal wharf of one of the large cotton compress companies was extended about 140 feet upstream.

Port Lavaca, Tex.—Local interests provided a turning basin and a channel connecting the basin with the Federal channel from deep water in Lavaca Bay to the shore line of Lynns Bayou. Two slips join the turning basin, one having a small decked wooden wharf and the other a marine ways of about 150-ton capacity. A concrete wharf 20 feet wide on the northwest side of the basin is equipped with four half-ton electric revolving derricks. Pipe lines connect the turning basin with an oil refinery west of town, which is being enlarged to a daily capacity of 7,400 barrels and a storage capacity of 95,000 barrels.

Port Isabel, Tex.—A reinforced concrete precooling plant was completed and one of the large oil companies was planning extensive improvements, including the installation of an 80,000-barrel steel tank, a vapor recovery unit, and a generator unit to the power plant. At a nearby oil refinery, a 16-mile pipe line was added and enlargement of the refinery and storage facilities was in progress.

PACIFIC COAST PORTS

San Diego.—Improvements have included: (*a*) Dredging a seaplane basin of about 170 acres, and with part of the dredged material reclaiming about 16½ acres adjacent to the municipal airport. Eleven and a half acres of this was transferred to the United States for a Coast Guard station and the remaining five acres paved and made into a seaplane landing apron. (*b*) Dredging about 18 acres in front of the Embarcadero to provide a sport-fishing boat basin and facilities for small boat navigation. (*c*) Dredging nearly 250 acres in the southerly part of the bay to provide a boat launching basin and additional anchorage space. The improvement includes a pier fill, 150 feet by 1,100 feet, with adjacent area for recreation purposes, another fill for fish cannery purposes, and an area for boat building activities.

Los Angeles.—A banana terminal was completed at berth 147 in West Basin, along both sides of which a total of 56 refrigerator cars can be spotted at one time. The harbor belt line railroad was improved by a 2½ mile extension and work was begun on a new terminal building at berth 155. An airport, primarily for use by the Navy, was provided on Terminal Island.

Long Beach, Calif.—A fireproof transit shed on Pier 1 in the Inner Harbor was constructed. Work was undertaken on Pier B in the outer harbor for improvement of 240,000 square feet of open storage. A transit shed with passenger facilities was also begun on Pier A in the outer harbor.

Stockton, Calif. — Additional wharves were provided, including Wharf and Transit Shed No. 1, six new brick shipside warehouses were built, an addition was added to the cotton compress, and a pipe line was constructed to convey crude oil from the channel to the oil terminal. A corporation was formed to develop 1,000 acres of water front property for industrial sites on Rough and Ready Island.

San Francisco.—A new reinforced concrete wharf, 600 feet long and 60 feet wide, was completed replacing the former bulkhead wharf between Piers 44 and 46. A shedded wharf was built connecting Piers 24 and 26; old Piers Nos. 9, 11, and 19 were replaced by two modern structures known as Piers 9 and 19.

Oakland Harbor.—In the outer harbor the apron wharf was extended 805 feet, Transit Shed No. 2 was extended 270 feet, new paving and roadways were constructed, and a 400-foot wharf in the north industrial area was completely rebuilt. In the inner harbor, a 506-foot extension to the Ninth Avenue Terminal was completed, two new mill buildings were built at the foot of Adeline Street, a new warehouse was added at the Howard Terminal, a new wharf was constructed at the foot of East Seventh Street, a two-story brick addition to the existing concrete mill building, and a wood frame and corrugated iron warehouse completed at the latter location.

Tacoma.—An open creosoted pile wharf, 640 feet by 80 feet, was constructed, with a channel 30 feet deep to deep water in Commencement Bay.

Seattle.—A ferry terminal was rebuilt with a two-story structure with facilities for handling automobile and passenger traffic. The port commission provided a net shed and wharf at Salmon Bay fishboat terminal, a transit shed and rail facilities at Bell Street Terminal, increased the fishboat icing capacity, and improved the fresh fruit handling facilities at the Spokane Street Terminal.

Vancouver, Wash.—A new terminal was completed by the Port of Vancouver, having 862 feet of water frontage, and a frostproof storage shed 740 by 120 feet.

GREAT LAKES PORTS

Green Bay, Wis.—A wharf was leased for use in handling pulpwood from vessels for shipment to interior paper mills. An oil company acquired waterfront property having a dock frontage of 600 feet for receiving petroleum products by tank vessels. Six storage tanks having a total storage capacity of 11,000,000 gallons are available. Another private company acquired property with a dock frontage of about 250 feet for the receipt of wood pulp, cement, and pulpwood by vessel. Mechanical handling facilities consist of a steam crane and an electric conveyor.

Milwaukee.—The Board of Harbor Commissioners leased a terminal site on Jones Island to an oil company where three storage tanks are available, having a total capacity of 30,000 barrels for gasoline received from water, and 18,000 gallons for gasoline received from tank cars or trucks.

Detroit.—Private interests were active at this port during the year. At one terminal on the Detroit River additional facilities for freight handling were provided and a brick building was remodeled into a warehouse, principally for newsprint storage. This terminal company constructed an additional ramp for loading automobiles to the spar desk of vessels, and installed two new electric gantry cranes for working freight in vessels having no self-unloading equipment. A new freight terminal consisting of 20 acres on the Detroit River was put into operation during the year. It is used exclusively for handling bulk materials which do not require covered storage.

Chicago.—The Chicago Sanitary District began the construction of controlling works in Chicago Harbor, including a complete lock, 80 by 600 feet in the clear.

FLOOD CONTROL

National Flood Control.—The general flood control act of June 22, 1936, established for the first time in the history of the Federal Government a definite flood control policy which provides for participation in the construction of economically justified flood control projects throughout the United States in co-operation with States, political subdivisions thereof, or local interests. About 270 projects, having a total estimated construction cost of $320,000,000, were authorized. Public No. 406, approved Aug. 28, 1937, amended the Act of June 22, 1936, and authorized the construction of a number of additional projects in the Ohio River Basin, the need for which was forcefully demonstrated by the disastrous flood of January, 1937. Actual construction within limits of available funds can now be placed under way for many of the projects when local interests have fulfilled the requirements of co-operation.

Mississippi River.—In the past year highly satisfactory progress has been made on the flood control project for the alluvial valley of the Mississippi River, adopted by the Act of May 15, 1928 and amended by the Act of June 15, 1936. Work authorized by the 1928 act was over 90 per cent completed when the amendment of 1936 was approved. The amendment retains the purposes and the completed features of the 1928 act, and authorizes an additional $272,000,000 for extension of flood control work in the alluvial valley of the Mississippi River from Cape Girardeau, Mo., to the Gulf of Mexico, including the St. Francis, Yazoo, Tensas and Atchafalaya Basins, as well as the alluvial lands around Lake Pontchartrain, for protection against the maximum predicted flood. North of the Arkansas River, floods will be confined generally to the main leveed channel and a limited area in the St. Francis Basin, and the City of Cairo, Ill., being given additional protection by the New Madrid floodway. South of the Arkansas River, floodwaters, in excess of what the leveed channel of the main river will carry safely, will find their way to the Gulf through floodways west of the river. New Orleans has been given additional protection by the Bonnet Carre Spillway, 33 miles above the city, emptying into Lake Pontchartrain. In addition to levee work, the project includes construction of revetments and regulating works

to prevent bank caving and to stabilize the channel in the interest of navigation.

The project as amended substitutes the Eudora Floodway through the Macon Basin and a back protection levee extending from the head of this floodway north to Arkansas River. South of Red River it provides for construction of the Morganza Floodway extending from the Mississippi River north of Morganza into the Atchafalaya Floodway south of Krotz Springs. The amended project includes a six-year program for the improvement and regularization of the Mississippi River and for improvement of the discharge capacity of the Atchafalaya River and of its outlets, as well as the construction of an additional outlet to the Gulf of Mexico, west of Berwick, La. Flood control projects for the St. Francis and Yazoo Rivers to protect from overflow by these rivers certain alluvial lands that have not been protected from overflow by the Mississippi River are now included in the project for the Alluvial Valley of the Mississippi.

The flood control work prosecuted by the Corps of Engineers of the U. S. Army in the alluvial valley of the Mississippi River protected that vast valley against the great Ohio River flood of January and February, 1937. This flood was passed to the Gulf of Mexico without any breaks in the controlling levees. The New Madrid Floodway and the Bonnet Carre Spillway, completed features of the 1928 plan, were operated for the first time in 1937, satisfactorily fulfilling the purpose for which they were designed. Since 1928 when work was started on the existing project, about 630,000,000 cubic yards of earth have been placed in the levees, 500,000 linear feet of revetment have been placed to protect the banks of the main Mississippi River and 200,000 linear feet of dikes have been constructed as contraction works in the interest of navigation.

Muskingum Valley.—In the Muskingum Valley in Ohio construction of 14 reservoirs for flood control is 81 per cent completed, the work being carried out under allotments aggregating $27,190,000 from Federal funds, the Muskingum Watershed Conservancy District being obligated to make available or expend an additional $12,000,000 for related work on the project.

Los Angeles.—In the metropolitan area on Los Angeles River and tributaries, on San Gabriel River and Rio Hondo, on Kenter Canyon and Ballona Creeks, work for the construction of corrective works extending from the San Gabriel and Santa Monica Mountains through the coastal plain to the Pacific Ocean to control destructive floods, has been actively prosecuted.

Vermont.—Two flood control reservoirs on the Winooski River constructed with Civilian Conservation Corps personnel under the supervision of the Corps of Engineers have continued to demonstrate their value in preventing floods. Construction under similar supervision of a third reservoir on the Waterbury River is well advanced.

CANAL AND CONNECTING WATERWAY COMMERCE

ATLANTIC COAST	Short tons	Value
Cape Cod Canal	2,801,396	$157,022,288
Inland Waterway from Delaware River to Chesapeake Bay	1,299,847	61,975,342
Waterways from Norfolk, Va.:		
To Sounds of N. C.	250,484	8,294,780
To Beaufort Inlet, N. C.	641,951	35,528,071
Waterway between Beaufort, S. C. and St. Johns River, Fla.	562,552	12,526,347
All others, Atlantic Coast	1,018,070	29,574,806
GULF COAST		
Intracoastal waterways:		
Apalachicola River, Fla., to New Orleans	1,315,604	34,890,631
Mississippi River to Sabine River, Tex.	8,790,255	115,661,431
All others, Gulf Coast	25,990,773	354,052,604
PACIFIC COAST		
Lake Washington Ship Canal, Wash.	1,695,223	10,118,794
All others, Pacific Coast	2,185,641	23,638,070
GREAT LAKES		
Keweenaw Waterway, Mich.	136,664	11,905,289
St. Marys Falls (Soo) Canal	69,528,600	799,786,656
Sturgeon Bay and Lake Michigan Ship Canal	343,433	33,198,200
Detroit River (1)	27,248,690	313,152,179
All others, Great Lakes	144,349	1,524,234
Total, Federal canals and connecting channels	143,953,532	$2,002,849,722
STATE AND PRIVATE CANALS		
New York State Barge Canal System	5,014,206	250,736,636
Florida State canals	71,034	958,746
Navigation Canal, New Orleans, La.	1,340,493	140,461,545
All other State and private canals	381,063	2,603,374
Total, State and private canals	6,806,796	$394,760,301

COMMERCE THROUGH THE PANAMA CANAL

(1927 to 1937)

(Fiscal year)	(1) Intercoastal (Short tons)	Total (Short tons)
1927	11,365,592	$31,078,000
1928	10,833,443	33,186,394
1929	11,084,212	34,342,567
1930	11,174,429	33,633,860
1931	9,862,020	28,092,736
1932	7,417,742	22,184,958
1933	7,197,801	20,280,655
1934	9,877,602	27,684,889
1935	8,919,019	28,346,670
1936	8,645,364	29,686,562
1937	7,324,792	31,481,380

(1) (Included in coastwise figures)

TOTAL COMMERCE ON U.S. WATERWAYS

(1927 to 1936)

Year	Short Tons	Value
1927	532,500,000	$25,555,000,000
1928	539,200,000	24,159,000,000
1929	583,800,000	24,311,000,000
1930	520,280,000	20,122,000,000
1931	445,648,000	14,935,000,000
1932	342,488,723	10,910,429,345
1933	394,104,000	12,597,000,000
1934	414,308,000	14,714,000,000
1935	453,331,000	16,889,000,000
1936	525,842,000	17,448,000,000

INLAND WATERWAYS COMMERCE

(Calendar Year 1936)

ATLANTIC COAST RIVERS	Short tons	Value
Hudson River (except lower section)	10,456,871	$238,606,159
Delaware River, above Philadelphia	3,641,912	21,680,242
Chesapeake Bay tributaries:		
Potomac River, below Washington	2,297,959	73,708,433
James River	2,094,005	82,367,321
Other tributaries	3,330,010	87,625,015
St. Johns River, above Jacksonville	743,417	30,304,742
All others, Atlantic Coast	6,280,055	89,582,368
GULF COAST RIVERS		
Mobile River tributaries	1,272,113	22,971,203
Black Warrior, Warrior, and Tombigbee Rivers	1,433,768	34,488,449
Southern Louisiana waterways (except Mississippi River)	7,921,902	101,178,939
All others, Gulf Coast	1,765,129	13,412,932
PACIFIC COAST RIVERS		
San Joaquin River, Calif.	1,244,103	53,628,058
Sacramento River, Calif.	770,127	46,004,515
Columbia River system:		
Columbia and Lower Willamette Rivers below Vancouver, Wash., and Portland, Oreg. (except ocean commerce)	5,715,683	54,568,145
Other sections of Columbia River	953,115	16,299,808
Willamette River above Oregon and Yamhill River	2,205,498	21,722,200
Other Columbia River tributaries	1,723,397	7,582,101
All others, Pacific Coast	5,716,130	36,630,700
MISSISSIPPI RIVER SYSTEM		
Mississippi River, Minneapolis to the Passes	27,625,485	1,108,549,641
Ohio River	24,383,689	279,377,371
Monongahela River	24,652,144	95,628,567
Allegheny River	3,480,069	12,087,247
Kanawha River	2,440,586	9,607,466
Cumberland River	810,513	6,729,747
Tennessee River, Knoxville to Paducah	2,166,397	7,789,769
All others, Mississippi River System	6,156,786	122,899,854
OTHER WATERWAYS		
(Not tributary to Atlantic, Gulf and Pacific Coasts)		
Fox River, Wis.	305,769	1,447,850
All others	163,959	1,464,036
Total, rivers and Other Waterways	151,750,591	$2,677,942,878

COASTWISE COMMERCE

(Including intercoastal)

ATLANTIC COAST	Tonnage both ways	Value
Portland, Me.	2,635,417	$ 50,143,670
Boston, Mass.	12,693,009	609,118,503
Providence, R. I.	5,021,180	627,146,744
New York, N. Y.	36,163,103	2,186,539,918
Philadelphia, Pa. (Philadelphia to the sea)	22,651,371	730,058,319
Baltimore, Md.	7,616,341	313,427,233
Norfolk, Va.	12,462,964	502,653,270
Newport News, Va.	8,493,971	75,635,470
Wilmington, N. C.	1,070,570	22,428,039
Jacksonville, Fla.	2,326,040	131,044,012
Ports of Puerto Rico	1,121,888	127,653,195
All others, Atlantic Coast	19,885,947	1,013,337,386
GULF COAST		
Tampa, Fla.	2,226,894	58,628,736
Pensacola, Fla.	192,107	8,985,238
Mobile, Ala.	1,625,216	65,976,293
New Orleans, La.	6,557,353	321,817,529
Baton Rouge, La.	3,261,982	39,860,380
Galveston, Tex.	2,170,175	205,290,967
Texas City, Tex.	4,367,280	48,465,322
Houston, Tex.	16,673,319	435,314,377
Port Arthur, Tex.	14,669,593	185,778,731
Beaumont, Tex.	14,897,760	164,995,874
Corpus Christi, Tex.	2,207,725	45,086,020
All others, Gulf Coast	9,054,301	99,758,982
PACIFIC COAST		
Los Angeles, Calif.	11,842,636	657,219,508
San Francisco, Calif.	2,628,336	321,924,893
Other San Francisco Bay ports	13,777,068	386,292,402
Portland, Oreg.	3,883,110	180,569,917
Tacoma, Wash.	1,412,890	56,275,667
Seattle, Wash.	4,342,492	284,556,495
All others, Pacific Coast	12,695,802	250,169,498
NONCONTIGUOUS		
(For Puerto Rico see Atlantic Coast)		
Ports of Alaska	427,362	60,757,350
Ports of Hawaii	3,975,151	271,854,517
Total, Pacific Coast and noncontiguous	54,984,847	2,469,620,247
Gross totals, all ports (except Great Lakes)	265,030,353	$10,538,764,455
Net total all ports, corrected for duplications of receipts and shipments	132,515,177	$5,269,382,228

FOREIGN AND DOMESTIC COMMERCE OF PORTS

(Calender Year 1936)
(Short Tons)

Grand Divisions	Foreign				Domestic		Grand Total	
	Imports		Exports					
	Tons	Value	Tons	Value	Tons	Value	Tons	Value
Atlantic coast	29,563,199	$3,421,871,554	11,425,111	$1,485,693,042	257,706,071	$11,813,985,256	298,694,381	$16,721,549,852
Gulf coast	4,737,265	159,166,385	14,636,087	583,490,748	91,697,117	2,084,845,048	111,070,469	2,827,502,181
Pacific coast	3,206,791	302,505,256	11,092,619	308,172,235	79,801,826	2,863,996,825	94,101,236	3,474,674,316
Great Lakes	5,422,697	162,778,236	10,163,124	60,112,277	237,890,301	3,223,141,188	253,476,122	3,446,031,701
Grand Total—unadjusted	42,929,952	4,046,321,431	47,316,941	2,437,468,302	667,095,315	19,985,968,317	757,342,208	26,469,758,050
Adjusted total, eliminating all known duplications	42,929,952	4,046,321,431	47,316,941	2,437,468,302	380,213,276	11,301,314,012	470,460,169	17,785,103,745

Total waterborne commerce of the United States, 1936: Adjusted total 525,842,000 tons; value $17,448,000,000.

OPERATIONS OF UNITED STATES NAVAL FORCES

By J. O. Richardson

Rear Admiral, U.S.N.; Assistant Chief of Naval Operations, Navy Department

EMPLOYMENT OF FORCES

Basic Policy.—The operations of the United States naval forces during the fiscal year ended June 30, 1937, were directed toward the carrying out of the established basic policy, which has been stated as follows: "To maintain the Navy in sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States." In these operations constant attention has been given to economy in order that the greatest possible effectiveness might be obtained from the funds appropriated for the maintenance of the Navy.

Objectives.—The following contributory objectives have been a guide toward attainment of the purposes expressed in the fundamental policy: (a) To exercise and train the units of the fleet to the highest state of efficiency; (b) To organize the Navy for operations in either or both oceans so that expansion only will be necessary in case of national emergency; (c) To protect American lives and interests in disturbed areas; (d) To co-operate fully with other departments of the Government and with the States; (e) To cultivate friendly international relations; and (f) To encourage civil industries and activities useful in war.

Organization.— The organization of the Navy did not undergo material change during the year. The seagoing units continued, with a few temporary exceptions, to be divided among the United States Fleet, the Asiatic Fleet, the Special Service Squadron and the Naval Transportation Service. New ships completed during the year were fitted into this organization and, in case they replaced old vessels, the latter were placed out of commission. Small craft, of non-seagoing types, were maintained for service in the naval districts and at naval shore stations. The shore establishment of the Navy performed essential services in its mission of supporting the forces afloat.

THE OPERATING FORCE AND PERSONNEL PLANS

Purpose.—The operations of the seagoing units of the Navy are, in their broad scope, planned far in advance. The principal plans upon which the operations are based are the Operating Force Plan and the Personnel Plan for the fiscal year concerned. These plans must be developed together, as they determine the number of ships that can be operated with the personnel that is available for their operation. When the amount of the funds appropriated for the year is known these two plans can be adjusted to close agreement and the contributory plans brought into harmony with them.

Personnel.—During the fiscal year 1937 the average number of enlisted men provided for was 96,500. The average enlisted strength of the Marine Corps was 16,500. In employing the Navy personnel the maximum practicable number of men was assigned to duty afloat. The men on sea duty were so distributed as to maintain the greatest possible number of ships in active commission. Ships which require full complements for their safe operation, such as submarines, were fully manned. The other units were maintained at about 85 per cent of their full peace-time complements. This is the lowest number that will insure reasonably effective standards for the performance of intensive training and provide for efficient upkeep of material.

Ships in Commission.—During the fiscal year 1937, 349 ships were operated at sea. Of these, 283 ships were in commission throughout the

year, 66 for portions of the year. The number of small craft in service in naval districts and at shore stations was 182. The total number of naval vessels of all types that were in service during the whole or a part of the fiscal year was thus 531. The ocean-going ships referred to above included 15 battleships, four aircraft carriers, 17 heavy cruisers, 10 light cruisers, 135 destroyers and light minelayers, 59 submarines, one minelayer, 15 patrol vessels and 93 auxiliary vessels of various types. Included among these were the following new ships, first commissioned during the year: one heavy cruiser, two gunboats, 25 destroyers and six submarines. Ships placed in commission after varying periods out of commission consisted of one cargo vessel and three ocean-going tugs.

Ships Placed Out of Commission.—The following ships were placed out of commission during the year: 21 destroyers, seven submarines, one gunboat and one patrol vessel. There were stricken from the Navy Register during the year 38 ships of various types, all of minor categories, whose age and material condition were such that they did not warrant retention and reconditioning.

THE UNITED STATES FLEET

Operations.—The major portion of the United States Fleet operated throughout the year in waters of the Eastern Pacific. As in other recent years, the basic training of type units was continuous and was supplemented by frequent periods of fleet tactical exercises in which all types participated for the purpose of co-ordinating the basic training and of developing the uses of type groups in support of each other in a fleet objective. The final and principal fleet exercise of the year was Fleet Problem XVIII, which was conducted in the Hawaiian-Pacific area during April and May. This exercise brought all available units of the Fleet together in a sustained and wide-spread operation, simulating war conditions as realistically as practicable, for the purpose of strategical as well as tactical training.

Fleet Landing Exercise No. 3 was conducted by designated units of the fleet during the second and third quarters. Training of the personnel in gunnery, engineering, communications, damage control and in the operation and unkeep of material was continuous throughout the year.

During the first quarter, units of the Fleet visited Alaska, the Hawaiian Islands and ports of the Northwest. Certain ships of the Battle Force were employed during this period in training naval reserves and Reserve Officers-Training Corps detachments. During the second and third quarters the Fleet was engaged principally in operations in the San Pedro–San Diego area for the basic training referred to above. After the completion of the Fleet Problem during the fourth quarter the heavy ships of the Fleet were present at the opening of the San Francisco Golden Gate bridge before returning to their bases.

The Training Squadron of the United States Fleet operated during most of the year in Atlantic waters, making cruises with naval reserves and Reserve Officers Training Corps units. During the summer months it cruised with midshipmen from the Naval Academy. Several ships of this squadron proceeded to the West Coast in the third quarter to participate in Fleet Landing Exercise No. 3, previously mentioned.

Tactics.—Ships of the Fleet, whenever operating at sea, are undergoing training in tactics, either singly or in varying groups. The more advanced phases of such training are provided for in the periodical tactical exercises of the Fleet as a whole, and in the annual large-scale fleet problem. Indoctrination in accepted methods and drills in the execution of the required movements are therefore continuous. Experiment with new methods and development of those which prove advantageous are also provided for and advances are made from year to year in the tactical capabilities of the various type groups and of the Fleet as a whole. The concentration of the Fleet on one coast at bases within close touch of one another has contributed greatly

to this result and has proven to be of the utmost value. This has been particularly beneficial at a time when new ships in considerable numbers have been joining the Fleet as replacements for overage ships withdrawn from service.

Gunnery.— Efficient performance of each ship in gunnery is a basic requirement for the battle efficiency of the Fleet. Active and continuous training in the use of weapons is therefore always an important part of the fleet program. Frequent target practices with all weapons were held during the year and very satisfactory progress in technique resulted. The program has, as in other years, included experimental practices for the trial and development of new and improved methods. Gunnery schools conducted in the early part of the year on board designated vessels of each type, attended by officers and men from other ships of the type group, continued to prove of great value as an intensive and economical method of primary training.

San Clemente Island, off the southern coast of California, has been placed under the jurisdiction of the Navy Department and has been designated as a fleet training base. It is being brought into use for target practice with small-arms and machine guns, and as an aircraft bombing range. It also provides an area suitable and useful for training in landing operations.

Engineering Performances.—The engineering performances of each ship in the Navy are subject to the observance of rules which have been designed to insure uniform good practice, close attention to detail and rigid economy. Complete data are observed and recorded for purposes of analysis. These analyses are useful in improving standards, developing better methods of operation and in pointing out any inherent weaknesses of material which require correction. The information collected and digested in this manner is of great value in improvement of design. It also provides the means for estimating closely the logistic needs of the Fleet in fuel, lubricating oils, and engineering stores under a wide variety of conditions.

AVIATION

Aircraft.—On June 30, 1937, the Navy had 1,468 airplanes on hand, of which 927 were service planes, 195 obsolescent, 294 obsolete and 52 experimental. Operations of aircraft with the Fleet have been extended in scope and have been characterized by close co-ordination between the air and surface units. The policy of maintaining naval aviation as an integral part of the Navy, wholly under naval administration and control, has proven its soundness and is essential to maintenance of the present high state of efficiency. The aircraft carriers of the Fleet, with their attached airplane squadrons, and the patrol plane squadrons of the Fleet have participated in the periodical Fleet tactical exercises and in the annual Fleet problem and have contributed outstanding performances. (See "Naval Aeronautics," pp. 344–350.)

Flights.—During the year Navy aircraft took part in the following notable flights:

1. Patrol seaplane squadrons of twelve planes each made nonstop flights in formation from San Diego to Pearl Harbor on January 28–29, 1937, and on April 22–23, 1937. These flights were incidental to transfer of the planes to the Fleet Air Base, Pearl Harbor.
2. A similar flight was made by a squadron of 12 patrol seaplanes from San Diego to Coco Solo, Canal Zone, on June 21–22, 1937, for the purpose of transferring these planes to the Fleet Air Base at Coco Solo.
3. Three patrol seaplane squadrons, assisted by small tenders, operated in Alaskan and Aleutian waters from July 23 to Aug. 8, 1937.
4. Four patrol seaplane squadrons (two from Coco Solo, two from Norfolk) conducted extended operations in the Caribbean area from Feb. 20 to March 14, 1937, basing on tenders. They visited

ports in Cuba, Puerto Rico and the Virgin Islands during this period.

5. Four patrol seaplane squadrons from Pearl Harbor conducted extended operations in the Hawaiian area from Oct. 24 to Nov. 6, 1937, basing on tenders. During this period the planes visited French Frigate Shoal, Pearl and Hermes Reef, Howland Island, Johnston Island and Kingman Reef.
6. Two squadrons of naval aircraft, one of them a Marine Corps squadron, participated in the National Air Races at Los Angeles, California, from Sept. 4 to 7, 1937.
7. Aircraft One, Fleet Marine Force, with a total of 53 planes, flew from Quantico, Va. to San Diego, Calif., and return in January and February, 1937, for the purpose of taking part in Fleet Landing Exercises in the San Diego area.
8. During the forest fires in the Lake Superior region in August and September, 1936, amphibian planes from Naval Reserve stations made 220 flights while assigned to duty in connection with fire-fighting. During the disastrous floods on the Mississippi and Ohio River Valleys in the spring of 1937, a number of Navy amphibians, both regular and reserve, were assigned to the area and made regular flights in connection with relief and observation duties.

THE ASIATIC FLEET

Ships of the Asiatic Fleet continued during the year to perform their normal functions, basing upon Manila Bay, except for the river gunboats of the Yangtze Patrol and the South China Patrol. The fleet carried out its usual program of basic training in gunnery, engineering and communications in Philippine waters and on the China coast. Units of the fleet made courtesy visits to British North Borneo, the Dutch East Indies, Singapore, French Indo-China, Hongkong and Japan.

The gunboats of the Yangtze Patrol operated entirely on the Yangtze River, those of the South China Patrol upon inland waters in the Hongkong area. Both forces were assigned duties in the direct protection of American nationals and property in their respective areas.

The Fourth Regiment of the Marine Corps, consisting of 60 officers and 1,000 enlisted men, was maintained at Shanghai. It performed no military operations during the fiscal year 1937, except in continuation of its program of training. The Marine Corps also maintained the Embassy Guard at Peiping as in previous years. The strength of this detachment was 20 officers and 487 enlisted men.

SPECIAL SERVICE SQUADRON

The ships of the Special Service Squadron were employed during the fiscal year in their usual area of operations in Central American waters. Their normal base is the Panama Canal Zone. The principal activity of these vessels was the accomplishment of the prescribed program of training exercises. During the year units of the squadron made courtesy visits to Colombia, British West Indies, Dutch West Indies, Mexico, Honduras, Santo Domingo, Costa Rica, Cuba, Guatemala and the Republic of Panama.

SQUADRON FORTY (TEMPORARY)

In September, 1936, a special temporary squadron, consisting of a light cruiser and two destroyers, was despatched to Spanish waters to assist in evacuating American nationals from the areas in which hostilities were underway. During the remainder of the year this squadron operated in the Mediterranean and in the Bay of Biscay, basing upon French ports.

NAVAL TRANSPORTATION SERVICE

The Naval Transportation Service is maintained for the purpose of caring for a part of the Navy's needs for water transport of personnel and supplies. The ships assigned to this service have been operated for pur-

poses such that commercial shipping facilities could not be used advantageously, on account of either the routes involved or because of the character of the cargo carried. Seven vessels were assigned to this service throughout the fiscal year 1937. There were two transports, one ammunition ship, two cargo carriers and two oilers. In addition, one combination troop and cargo ship was commissioned for such service during a part of the year.

The auxiliary cargo ship, *Vega,* in July–August 1936, made the annual voyage to the Pribilof Islands for the purpose of transporting personnel and supplies to government agencies in that area and of returning with the yearly shipment of sealskins from the government-supervised catch. This has been a Navy mission since 1927. The auxiliary cargo ship *Sirius,* in May–June 1937, towed the dredge *Hell-Gate* from New York to Pearl Harbor.

NAVAL INTELLIGENCE

The Office of Naval Intelligence is an agency for the collection, analysis and dissemination of information of value to the Navy. It administers the work of naval attachés and naval missions abroad, maintains the Navy Department's public relations branch and supervises the Department's library and historical records. These activities were continued during the fiscal year 1937 without essential change. New attaché offices were opened during the year at Santiago, Chile, and at Bogota, Colombia.

Relations with the press and with allied publicity agencies were cordial and satisfactory. Special effort was continued to supply the American public with information about the Navy as fully and promptly as practicable.

The Navy Department Library continued its work of classifying and indexing naval records of historical value, including pictures, and of publishing naval historical documents. During the year there were added to the Library 1,000 books and documents, bringing the total of the collection to 84,240 items. The Library has done much research work in complying with requests for information from other departments of the government and from the public.

NAVAL COMMUNICATIONS

Thirty-six naval radio traffic stations ashore were maintained in an active status during the fiscal year. Six others were kept in an inactive status, with only sufficient personnel for upkeep. In 12 United States diplomatic missions abroad there were maintained radio receiving sets, each operated by a Navy radioman, for the purpose of copying the radio bulletins broadcast for the Department of State. A thirteenth station of this kind was added during the year in the United States Legation at Pretoria, Union of South Africa. The station established during the previous year in the Legation at Addis Ababa, Ethiopia, was closed in January, 1937. Regular traffic stations at Cayey, Puerto Rico and at Los Banos, Philippine Islands, were closed during the year and arrangements were made to turn over to the Department of Commerce the station at St. Paul, Pribilof Islands.

It is estimated that the Naval Shore Radio System handled traffic, including relays, totalling 148,859,341 words. Of this traffic, approximately 48 per cent was for other departments of the government.

The Navy maintained during the year 41 radio direction finder stations for the purpose of furnishing bearings to assist in the navigation of ships near our coasts. This service is available to, and used by, not only United States naval vessels but by merchant or naval ships of all nationalities. Similar service is also given to aircraft in flight, when requested. During the year the stations furnished 234,400 bearings. The value of this service to the recipients can hardly be over-estimated.

The Naval Communication Service broadcasts time signals several times daily from the Naval Observatory, Washington, D.C., and the Central Observatory, Manila, P.I. Of these broadcasts, 10 are primarily for maritime interests and 20 for non-maritime

interests. Most of these broadcasts were on several frequencies simultaneously, which accounts for a total of 24,820 time signals transmitted by naval radio during the year.

Weather bulletins were broadcast daily from 27 naval radio stations; hydrographic information bulletins daily, or as issued, from 20 stations. Naval radio facilities are also of assistance to the Weather Bureau in its collection of observed weather data, especially from ships at sea.

The Navy accepts commercial telegrams for transmission through its system only when private facilities are not available. There was, nevertheless, a considerable volume of such traffic during the year and the earnings turned in to the Treasury from this source during the year amounted to about $34,000.

Communications in the Fleet, both by radio and by visual means, were gradually improved through intensive training and competition and through improvement and modernization of material.

Visual communication between ships of the Fleet and United States merchant ships has been encouraged and the number of messages exchanged has increased from year to year.

The Naval Communication Reserve has made very satisfactory progress in numbers and in efficiency. Thirty Naval Reserve Radio Control Stations are equipped with government-owned transmitting and receiving equipment. The net gain in personnel of the Naval Communication Reserve during the year was 80 officers and 450 men; its total strength is now 880 officers and 4,250 enlisted men.

The Naval Communication Reserve rendered excellent service during the Mississippi and Ohio River floods during the spring of 1937, operating stations at a number of key points in the network through which the relief activities under the supervision of the Coast Guard were controlled. The Communication Reserve Personnel in the Eleventh, Twelfth, Thirteenth and Fourteenth Naval Districts (West Coast and Hawaii) was placed on active training duty during Fleet Problem XVIII and performed very creditable service.

In communications, as in other matters, close co-operation with the Army has been continued and has been extended wherever this could be done to the benefit of efficiency.

TECHNICAL DEVELOPMENT

The technical design, research and experimental work of the Navy is carried out by the several material bureaus of the Navy Department and in the various laboratories under their direction and control. In addition, there has been established in the Office of the Chief of Naval Operations a Technical Division for the purpose of maintaining a general close liaison with the vast research resources of the country at large, and of keeping the Chief of Naval Operations informed of technical developments both within the Navy and in civilian activities. This Division maintains close touch with the National Research Council and with leading men of science throughout the country and is developing means whereby an emergency reserve staff of outstanding research scientists may be made available when needed. The Technical Division also reviews inventions and technical ideas submitted to the Navy Department from various sources at home and abroad and refers to the material bureaus those which appear worthy of further consideration.

OPERATIONS OF THE MARINE CORPS

The operations of the Marine Corps, as an integral part of the Navy, have been directed toward accomplishment of the following purposes, in support of the approved naval policy: (a) To provide adequate and trained marine detachments on board vessels of the Navy; (b) To maintain the Fleet Marine Force in immediate readiness as a tactical unit of the United States Fleet; (c) To protect naval property and shore establishments within the continental limits of the United States and in outlying possessions;

(d) To protect American lives and interests in disturbed areas involving operations ashore.

In effecting the above purposes, Marine detachments were maintained on board 48 ships, these detachments totalling 109 officers and 2,256 enlisted men. The Fleet Marine Force carried out an extensive training program at its bases and by participatio with other units of the Fleet in Flee Landing Exercise No. 3. At the tim of this exercise it consisted of 29 officers and 3,953 enlisted men. Dur ing the year 172 officers and 4,464 en listed men of the Marine Corps wer employed in guarding naval activitie of the shore establishment.

NAVAL CONSTUCTION AND EQUIPMENT

By Peter Bain

Naval Construction Consultant

THE INTERNATIONAL SCENE

The year 1937 at the outset saw the curtain rise on a new act of the drama of world naval rivalry. Interested nations were free again to build as many combatant craft as their administrative treasuries would bear. The absence of all treaty restriction was perhaps nowhere more in evidence than in Great Britain where on Jan. 1 were laid the keels of two 35,000-ton battleships—*King George V* at the Vickers-Armstrong yard, Walker-on-Tyne, and *Prince of Wales* at the Cammel-Laird yard, Birkenhead. Material, manufactured and in the raw, had been in process of assembly for many months previously; more or less secretly, of course, although nothing in the letter of treaties while existent forbade the purchase of materials of construction or their manufacture and fabrication in advance of keel laying.

At the close of 1937 seven great Powers were feverously engaged on naval construction, thereby making it impossible to forecast the effect on any balance of fighting strength afloat a few years hence. Naval activity during the year maintained undiminished an intensiveness no less apparent than that which preceded the World War. Then, Great Britain and Germany were the only serious competitors; to these must now be added the United States, Japan, Russia, France, and Italy. The Pacific, the Eastern Atlantic and Mediterranean constitute the arenas for whose supremacy rival programs of naval construction have been formulated, developed, and promoted. At no time since 1918 has a new arms limitation treaty been more urgently needed than in these closing days of 1937, yet at no time has there been a more hopeless outlook for the slightest hint from any quarter. The huge quantity of naval tonnage under construction throughout the world must seem utterly unaccountable to those who have been led to believe that air power development had sealed the doom of most naval craft. The responsible authorities who determine the offensive and defensive weapons of the various nations are under no misapprehension regarding the incapability of the airplane in oceanic warfare, unless it is conveyed by ship to the scene of action. Thus, no nation, however well equipped for air combat, could make its air arm effective overseas without the support of a powerful navy. The United States apparently grasped this situation early, hence its continuity of leadership in the parallel development and co-ordination of naval and air power.

LONDON NAVAL TREATY

The London Treaty of March, 1936 offers little prospect of controlling either naval construction or equipment; yet it may be credited with a certain enhanced value through the elapsed twelve months. On July 17, 1937 more than a year of patient negotiation ended at London with the signing of the Anglo-German and Anglo-Russian naval treaties restrict-

ing the size and gun caliber of battleships and providing for exchange of building plans with the British Government. In addition, there were signed an exchange of notes and declaration linking the new treaty with the Anglo-German naval agreement of 1935, under which the Reich agreed to restrict its fleet to 35 per cent of Britain's total tonnage. Great Britain was authorized to negotiate the new treaties and had been acting under power of attorney from the United States and France, the other signatories of the London Treaty of 1936. For the most part, the new agreements simply extend to the rival Baltic naval Powers provisions embodied in that treaty. Germany and Russia are bound not to build battleships larger than 35,000 tons and main armament of 16-inch gun limit; aircraft carriers of over 23,000 tons, or smaller craft above the limits laid down by the major naval Powers. Arising from the foregoing agreements, two rather important modifications of the 1936 London Treaty were conceded. One of the concessions permits Germany and Russia to build a reasonable number of cruisers between 8,000 and 10,000 tons; this notwithstanding the treaty declaration of a six-year holiday on the building of vessels in this category. The United States, Great Britain and France had bound themselves not to break the holiday without three months consultation with the other powers. Germany and Russia, however, may build 8,000 or 10,000-ton cruisers through the simple process of notifying Great Britain of their intention to do so. The second modification of the 1936 treaty relates to the exchange of building plans. Because Japan is not a party to the 1936 treaty, Russia has been granted the right to complete secrecy regarding vessels under construction or in commission in Far Eastern waters. The United States must exchange data concerning both her Atlantic and Pacific fleets, while Russia will do so only for her combatant craft in the Baltic and Black Seas. Again, should Japan build naval vessels of size and gun caliber forbidden by the 1936 treaty, Russia has the right to follow suit in Far Eastern waters, providing that Great Britain is notified.

INTERNATIONAL RECOGNITION OF SOVIET RUSSIA

Soviet Russia's ranking as a naval power has been recognized internationally for the first time and without objection from her potential enemy in the Baltic. It is by no means certain that Russia plans naval expansion on a more or less formidable scale, yet when the Anglo-Russian treaty was signed, Soviet shipyards had under construction at least three 8,000-ton cruisers of 7.1-inch gun armament, the latter constituting a substantial increase over that of any new cruisers being built by major world Powers elsewhere. The Anglo-German exchange of notes included mention for the first time of the existence of a secret "gentlemen's agreement" between Great Britain and Germany in 1935, under which the latter promised to build not more than three heavy cruisers, although the formal treaty of that year provided for five vessels in that category. On the ground that Russia had already started construction of heavy cruisers, the secret agreement ceased, thereby enabling Germany to build up to her full allowance. In a reciprocal concession to Great Britain, Germany agreed to maintain her over-age tonnage up to 35 per cent of the British over-age strength; in other words, Germany is barred from securing in new vessels a 35 per cent of the British tonnage which embraces new and old ships together.

The 1936 naval treaty went into effect on July 29. With the ratification of Great Britain, all major naval Powers except Japan and Italy became subscribers to the pact which was signed March 25, 1936 in London. The United States Senate ratified the pact on May 18, 1936, and France followed suit on June 25, 1937. Germany and Soviet Russia came within its provisions on July 17 when they signed separate agreements with Great Britain. Japan turned her back on the pact. Italy refused to sign because of sanctions against her and the Mediterranean defensive agreements dur-

ing the Italo-Ethiopian war. The Anglo-German and Anglo-Soviet naval agreements went into effect on Nov. 4, 1937. Successor to the Washington and London naval limitation treaties of 1922 and 1930 respectively, the less comprehensive 1936 pact does not provide for limitation of actual fleet strengths, restricting only the size of certain vessel types and guns.

THE UNITED STATES POSITION

On Jan. 8, 1937 President Roosevelt ordered the construction of two capital ships. This move was interpreted as a reply to most foreign Powers for their refusal to renew or remake treaties for naval armament limitation and for having already started construction on no fewer than 11 more or less formidable vessels of a like category. At a press conference the President intimated that he had issued the order for the two ships with deep regret, emphasizing however that the United States was not committed to participate in any naval construction race.

In a formal statement of reasons for the action taken, he said: "In accordance with the provisions of the Navy Appropriation Act of June 3, 1916, I have directed the Navy Department to proceed with the construction of two replacement capital ships. The keels of these ships may be laid in conformity with existing treaties at any time after Jan. 1. Three of our battleships, the *Arkansas, Texas,* and *New York,* will be more than twenty-six years old before these ships can be completed. If we are not to reduce our navy to obsolescence, the replacement of capital ships can no longer be deferred. The last Congress made an initial appropriation for 'two capital ships as replacement of over-age capital ships, to be undertaken only in the event that the President determines as a fact that capital-ship-replacement construction is commenced by any of the other signatory powers to the Treaty for the Limitation and Reduction of Naval Armaments signed at London, April 22, 1930.' On July 29, 1936, Sir Samuel Hoare, First Lord of the Admiralty, announced that orders for two battleships of the 1936 program had been let, and stated: 'It is the intention that the keels shall be laid at the earliest possible moment permitted by the Washington Naval Treaty; namely in January 1937. In order to achieve this object, it is essential to order the vessel now, and although complete specifications will not be available until October, there is sufficient information available to enable the contractors to prepare for laying down the keels in January next.' On December 12, 1936 France laid the keel of the capital ship *Jean Bart.* In addition to these three capital ships whose construction has been undertaken since the passage of the Navy Appropriation Act, eight others are under construction in the following countries: three in France, two in Italy and three in Germany. Some time will elapse before bids can be obtained and contracts awarded, and additional time will be required for contractors to assemble material before the keels of our two ships can be laid."

Eventual cost of the two new ships is expected to approximate $100,000,000, of which $20,000,000 will be spent during the 1937–1938 fiscal year. Money for the initial work was provided by Congress in 1936, being part of a lump sum for construction in the event that other signatories to the naval limitation treaties declined to extend them. The budget submitted to Congress on Jan. 8 asked an appropriation for the navy in the fiscal year 1937–1938, of $587,302,000, an increase over the previous twelve months.

U. S. BATTLESHIP CONSTRUCTION

Preliminary plans for the two new battleships having been completed, President Roosevelt on June 22 ordered that both be built in navy yards, one at New York and the other at Philadelphia. While expectation pointed to one of the two vessels being constructed in a private shipyard, the huge differential in costs between the latter and the estimates of the Navy Construction Corps made a 50–50 division of the work impossible. The lowest fixed bid for construction of one battleship was $55,875,824 sub-

mitted by the New York Shipbuilding Corporation. The Bethlehem Shipbuilding Corporation submitted a fixed price bid of $59,900,000. The Philadelphia Navy Yard made an estimate of $36,560,300 for one battleship, the relative bid of the Brooklyn Navy Yard at New York being $37,265,843. Private bidders sought 48 months to complete the one battleship on which they bid, the like elapsed time being estimated in the navy yard offers.

Official announcement was made by the State Department on July 10 that 16-inch guns would be mounted on the two new 35,000-ton battleships. The decision was reached with "greatest reluctance," yet its declaration merely served to confirm what obviously had become inevitable since Japan a few weeks previously had refused both British and American appeals to subscribe to guns of 14-inch maximum caliber. It may therefore be taken for granted that the battleships of other naval Powers will mount 16-inch caliber guns as their main armament. *North Carolina* and *Washington* have been chosen as the designations of the two new battleships, the first-named being scheduled for construction and equipment at New York and its associate at Philadelphia. Following completion of the *North Carolina* and *Washington,* the only States which will not have been represented in the battleship category will be those of Montana and South Dakota. They, as State names, belonged to capital ships under construction prior to the Washington Treaty but were scrapped ahead of completion.

CONSTRUCTION FEATURES

Early in the year, the Navy Department intimated that the new battleships would be powered by steam turbines plus the mechanism of the necessary reduction gears rather than by electric drive. According to Rear Admiral Harold G. Bowen, chief of the Bureau of Engineering, elimination of motors and generators required for electric propulsion is expected to result in substantial savings of machinery weight and space, considerations of major importance when such savings may be utilized to provide increased speed, greater gun power, heavier armor protection, better compartmentation, and added facilities for planes, radio, and associated equipment.

Some years ago the navy pioneered in electric propulsion, the system being employed in the last five battleships constructed. The propulsion and auxiliary machinery equipment together with the hull of the vessel constituted the basis on which private yard bids and navy yard estimates were formulated. Armor and protection will, it is calculated, cost approximately $20,000,000 more. The Navy Department's original estimate to Congress for each battleship completely equipped aggregated around $60,000,000.

While it may be taken for granted that the designed speed of the new battleships was still an open question toward the year end, not a little criticism was here and there aroused over the probability of its being from 26 to 27 knots. A capital ship like most other combatant, auxiliary and merchant craft in service, is more or less a compromise. It calls for armor protection, hitting power and speed. High speed usually demands the sacrifice of protection. Again, some authorities hold that the added weight of machinery and greater space occupied is too costly when reviewed in the light of higher degree manoeuvring capacity because of an added knot or two. Further, the exhaustive report of the British Subcommittee of Imperial Defense does not consider vulnerability to aircraft an altogether sound reason for over-devotion to speed.

In brief detail the list under construction abroad embraces: the *King George* and *Prince of Wales* in Great Britain of 35,000 tons each, a main armament of 14 or 16-inch guns, and speeds of not less than 30 knots; the *Littorio* and *Vittorio Veneto* in Italy of 35,000 tons each, a main armament of nine 15-inch guns and a speed of 30 knots; the *Scharnhorst* and *Gneisenau* in Germany of 26,000 tons, 30 knots speed and armament of nine 11-inch guns; the *Dunkerque* and *Strasbourg*

in France of 26,500 tons each, a main armament of eight 13-inch guns and speeds of 29.5 knots. It may well be assumed that the United States Navy Department is overlooking nothing in its studies and research toward the best all-round disposition of the three-fold complexity of speed, guns and armor.

PROJECTED U. S. BATTLESHIP PROGRAM

In pursuance of the policy of replacing gradually all of the 15 overage United States capital ships by 1944, Congress is to be asked in 1938 for funds with which to lay down two more of that category. It may therefore be inferred that the Navy Department hopes to have Congress authorize two new capital ships a year until the replacements are complete. On Aug. 4, Admiral William D. Leahy, then Chief of Naval Operations, following his declaration that a capital ship replacement program be planned and adhered to, confirmed an already generally accepted popular estimate that our role relative to a world armament race among other leading naval Powers would continue to be simply a matter of building up to treaty limits, expirations on Dec. 31, 1936 notwithstanding. He took pains to point out also that we had not embarked on a program of matching ship for ship with Great Britain which contemplates having no less than five 35,000-ton battleships under construction early in 1938. Nor, he added, was it intended to recondition the old battleships as they become replaced, although Great Britain has a program of reconstruction and reconditioning in effect covering cruisers as well as battleships.

Tentative new construction plans relate to the building of two light cruisers of 7,500 tons each, replacements presumably for the *Omaha* and *Milwaukee*, both of which were completed in 1923. Admiral Leahy revealed too that the new 20,000-ton aircraft carriers *Yorktown* and *Enterprise* which are being built by the Newport News Shipbuilding and Dry Dock Co. would be delayed nearly a year due to faults that had developed in the propulsion gearing equipment and sundry minor mechanical defects. Expense of replacing the reduction equipment and making repairs to bearings, lubricating apparatus and other parts is being borne by the shipbuilders. According to Admiral Leahy there was no question of sabotage involved, the reduction gearing having been found to produce excessive vibration and noise, while the other mechanical defects were of the minor character usually experienced in the majority of ships before final acceptance by the Navy Department. The *Yorktown* was to have been completed on Aug. 16, and the *Enterprise* on Dec. 21. Authorized in 1933, their individual cost was set at $19,000,000.

COMBATANT CRAFT IN U. S. NAVAL ESTIMATES

On April 28, President Roosevelt signed the $516,254,821 Naval Appropriation Bill. Of the total, $130,000,000 was allocated to the construction of combatant ships started under the record peace-time Naval Supply Bill of the previous year; to the start of eight new destroyers and four submarines, and the initial outlays on the two new battleships. Altogether, 81 vessels of various types share in the allocation, their representative detail consisting of the two battleships, three aircraft carriers, 11 cruisers, 48 destroyers, 16 submarines and one gunboat. During discussion of the Naval Estimates in the House of Representatives on March 2, Representative Vinson of Kentucky, chairman of the Naval Affairs Committee, pointed out that "last year we received more money than we could use in building ships. The strikes in the New York Shipbuilding Corporation's yard plus the tie-up in steel due to the Walsh-Healey Act, have retarded the program."

Expressed in cold figures, the Navy Department obligated itself for $553,429,332 during the fiscal year 1937, while expenditures recorded during the period on a checks-issued basis amounted to $51,834,738 less. Under the regular naval acts and exclusive of trust funds, estimated expenditures during the fiscal year 1938 on a checks-issued basis amount to $569,458,627.

Obligations and expenditures under Navy Allotments of National Industrial Recovery, Emergency Construction, and Emergency Relief Funds are placed at $21,673,257 for the like period. In his annual report, Secretary of the Navy Swanson stressed the importance of continuing an orderly program of needed additions and replacements from year to year without lapses. Naturally, in any such program, interruptions resulted not only in reducing the effectiveness of the fleet and jeopardizing the national security, but led to increased costs whether sporadic or intensive construction periods were initiated to compensate the lapses.

As authorized in the Vinson-Trammell Act of 1934, Secretary Swanson pointed out that naval development during the fiscal year ended June 30, 1937 continued the new construction and orderly replacement of over-age ships and aircraft. The 1938 Naval Appropriation Act provides for continuation of a like policy—to achieve and maintain a naval strength not in excess of the provisions of the Vinson-Trammell Act and therefore not in excess of the former Washington (1922) and London (1930) treaties now expired. Additional new construction provided for in the 1938 Appropriation Act consisted of eight destroyers and four submarines. Announcement was made on Sept. 15 that two of the 1500-ton destroyers had been allocated to the Boston Navy Yard, two to the Fore River Plant of the Bethlehem Shipbuilding Corporation, and two others to the Bath Iron Works, Bath, Me. Two of the submarines are being constructed by the Electric Boat Co., and two at the Portsmouth Navy Yard. The submarines are each of 1,450 tons.

NAVAL AUXILIARY CONSTRUCTION

Fifty million dollars worth of construction of naval auxiliaries was authorized in a Bill sent to the White House on July 27. Vessels listed in the Bill and their estimated costs are: seaplane tender, $12,265,850; destroyer tender, $11,519,200; mine sweeper, $1,557,000; submarine tender, $12,606,200; fleet tug, $1,761,000; and oiler, $8,496,800. Funds have been made available for only two of the vessels. The aircraft tender and the destroyer tender will be placed under construction as soon as practicable, being the two auxiliaries most urgently needed. At least half of the auxiliaries authorized must be built in navy yards. It is also provided that Pacific Coast bidders shall have a six per cent preference over their Eastern competitors. The House Navy Committee believed such a preference would encourage shipbuilding on the Pacific Coast and thereby promote a more widespread interest in national defense.

President Roosevelt signed the bill July 30. The six vessels will aggregate around 36,500 tons. As nearly all of our auxiliary craft are slow and over age, most of them being unable to perform effectively their peacetime duties—the newest unit having been commissioned in 1926—it is hoped that Congress will appropriate funds for the other four ships in the near future and that authorization will be obtained and funds appropriated for additional construction of auxiliaries in subsequent years, thereby adopting and following a consistent plan to fill an urgent need. As Secretary Swanson rightly stressed in his annual report, auxiliary craft would be required in time of war in numbers too great to be built and operated by the Navy in time of peace; therefore, the numbers to be operated during the latter should be limited to a sufficiency to meet peacetime fleet requirements. In any case, certain auxiliary types that have no commercial value, such as repair ships, and destroyer, submarine and aircraft tenders, cannot be drawn from the merchant marine when emergency demands; therefore, only through a construction program similar to that for combatant vessels can the special types indicated be provided.

As a wartime auxiliary reserve, fast and in every respect up-to-date vessels of the merchant marine, now being re-created, naturally had a place in Secretary Swanson's summary of our naval auxiliary upbuilding program. Due to various causes, many of them beyond control of the Navy Depart-

ment, completion of new vessels under construction by both private contractors and navy yards continued to be greatly handicapped and delayed. Private shipyard strikes and the lack of steel constituted the chief elements adversely affecting normal activity. Toward the end of the third quarter of the fiscal year, bids on the supply of 25,000,000 pounds of steel for destroyer and submarine construction were received by the Navy Department, manufacturers having at length seen their way clear to participate in navy contracts under the terms of the Walsh-Healey Act. Concurrently, with the assurance of sufficient steel for its building programs, announcement was made that work would immediately start on six destroyers and three submarines which had been delayed through lack of material. Six navy yards were affected.

CONSTRUCTION MATERIALS

Continuation of the shipbuilding program and imposition of new laws and regulations on contracts and contractual matters placed somewhat of a peak load on the Purchase Division of the Bureau of Supplies and Accounts, new and recently enacted legislation necessitating some altered contract stipulations in the invitations for bids and the awards developing therefrom. The Walsh-Healey Act, which became effective on Sept. 29, 1936, imposed new contractual representations and stipulations and, as a result, slowed up procurement in many lines of essential materials. The most serious difficulty experienced was that of the inability of the Navy Department to secure adequate bids on steel. There were like interferences, although of lesser degree, in the procurement of copper and machine tools. Many of the problems first encountered have now vanished, eventuating, as a general rule, in contracts being made for execution subject to the representations and stipulations of the Act without much objection.

The high rate of the business of purchasing supplies and materials for the shipbuilding program under way for several years continued throughout 1937. Value of the purchases centralized in the Bureau of Supplies and Accounts aggregated $105,376,781, the highest figure for any peacetime fiscal year. Expenditures during the year for additions to plant equipment and replacements were made as in recent years under the joint collaboration of the Bureau of Construction and Repair and that of the Bureau of Engineering. A total of $1,566,100 was expended for this purpose, $66,100 being specially allotted to the Norfolk Navy Yard to enable it to speed up the production of turbine blades essential to the current construction and equipment programs. Approximately $1,000,000 of the remainder was expended for metal-working machine tools—replacements and additions—and $500,000 for other apparatus and plant appliances.

The difficulties experienced in the procurement of steel, copper and machine tools constrained Secretary Swanson in his annual report to point out that the Navy Department is definitely apprehensive regarding the results to our national defense of the increasing amount of restrictive legislation dealing with the procurement of material and execution of contracts for naval work. The Department is in favor of efforts to prevent collusive bidding, to prevent excessive profits at the expense of the taxpayer, and to prevent sweatshop methods and exploitation of labor. The utmost care should, however, be exercised to insure that attempts to accomplish such desirable ends do not result in such inordinate delays, limited competition and high prices as will not only defeat the purpose of such laws, but will further result in handicapping the Navy in achieving that strength, efficiency and up-to-dateness which the nation has the right to expect and demand.

COMBATANT AND COMMISSION CONSTITUENT OF THE U. S. FLEET

The status of the United States Navy in its constituent of major combatant types of ships as of June 30, 1937, was represented by 15 capital vessels totalling 464,300 tons already built, and two of 70,000 tons building or appropriated for; three aircraft carriers totalling 80,500 tons already

built, and three of 54,500 tons building or appropriated for; 17 heavy cruisers totalling 161,200 tons already built and one of 10,000 tons building or appropriated for; 10 light cruisers totalling 70,500 tons already built, and nine of 90,000 tons building or appropriated for; 197 destroyers totalling 232,240 tons already built, 55 of 86,350 tons building or appropriated for; 83 submarines totalling 74,590 tons already built and 17 of 24,715 tons building or appropriated for. The five categories indicate in the aggregate 325 ships of 1,083,330 tons already built and 87 ships of 335,565 tons building or appropriated for.

During the fiscal year 349 ships were maintained and operated at sea. Of these, 283 were in commission throughout the whole period and 66 were in commission part of the time. There were also operated in the various naval districts and stations 182 small craft of sundry types and, in addition, four schoolships were loaned to New York, Massachusetts, Pennsylvania, and California for merchant marine training purposes. The total number of naval vessels of all types in service, including the schoolships, was thus 535.

Ships in commission and operated at sea consisted of 15 capital craft, including one unit in reduced commission; 17 heavy cruisers, 10 light cruisers, 135 destroyers and light mine layers, including 15 in reduced commission; 59 submarines, three aircraft carriers, one mine layer, 15 patrol vessels, and 94 auxiliaries of all types. Included in the foregoing were the following new vessels placed in commission during the year: one heavy cruiser, 25 destroyers, six submarines and two gunboats. Other craft placed in full commission were one auxiliary cargo vessel and three ocean-going tugs. Ships placed out of commission during the year embraced 21 destroyers, seven submarines, and two patrol vessels. In addition, 38 craft of various types were stricken from the Navy Register. All vessels in full commission participated in the Engineering Performances to the fullest extent compatible with their special employments. The reliability of the vessels of the Navy showed improvement over that of the year previous, and this circumstance is being stressed in order that any inherent weaknesses in the engineering plants may be discovered and corrected. The seven cruising cutters for the Coast Guard were commissioned and tried and may be considered as practically completed.

BUREAU OF CONSTRUCTION AND REPAIR ACTIVITIES

On July 1, 1937, 71 vessels of various categories were under construction in private and navy yards at stages showing a range scope all the way from keel-laying preparation to immediately imminent completion. Included in the total were two battleships, three aircraft carriers, one heavy cruiser, nine light cruisers, 17 submarines, five destroyers of 1,850 tons each, and 34 destroyers of 1,500 tons each. Of ships under construction in private shipyards on July 1, 1936, the heavy cruiser *Vincennes*, three submarines, six destroyers of 1,850 tons each and eight destroyers of 1,500 tons each, were delivered during the fiscal year ended July 30, 1937. In addition to the foregoing, two submarines, 10 destroyers of 1,500 tons each, and two 2,000-ton gunboats were completed in Government navy yards.

In his annual report, the Chief of the Bureau of Construction and Repair, besides referring to the above-mentioned accomplishment embracing 32 combatant craft, stressed the fact that during the like period 26 vessels were launched and the keels of 18 laid. He further indicated that the Bureau had continued to be actively engaged in the prosecution of the extensive building programs authorized by Congress over the past four years and had been also engaged in the preparation of plans anticipatory of possible new construction projects. Work on designs for seven types of naval auxiliaries was undertaken and indications were that plans and specifications would be ready for issue at the earliest possible moment. Revision of the general specifications for construction of

ships of the United States Navy was reported as making progress toward accomplishment. Not the least gratifying feature of the year's developments pertaining to the Bureau of Construction and Repair was the obtaining of funds for starting a new experimental model basin. This highly important auxiliary in the work of the Bureau will be erected at Carderock, near Cabin John, Maryland, and will be known as the David W. Taylor Model Basin. The need for this new experimental establishment has long been felt by the Navy Department and no less so by our leading shipbuilding and marine engineering institutions in the closely related spheres of merchant vessel design and powering.

In the first half of the fiscal year 1938 which began on July 1 and ended Dec. 31, 1937, continued progress was recorded in the specific directions of keel-laying, launching, delivery, and commissioning of new combatant naval ships. Among the more notable of the launchings were the 10,000-ton light cruiser *Honolulu* at the New York Navy Yard in Brooklyn on Aug. 26, the *Nashville* on Oct. 2, at Camden, N.J., and the *Wichita,* also a 10,000-ton but heavy type cruiser, on Nov. 16.

The *Honolulu, Brooklyn, Helena, Nashville* and their sisters are known officially as light cruisers but light only by compliment because they mount 6-inch guns in their main batteries instead of the 8-inch guns of the *Pensacola, Augusta, Portland* and *Astoria* classes. Their displacement of 10,000 tons is the same as that of the 8-inch gun ships but a much larger proportion of their tonnage is allocated to increased armor, better compartmentation and other protective features. Their projected speed of 33 knots or better, together with their armor, associates them to some extent with the battle cruiser class, although the caliber of their guns fails to maintain the parallel. The eight airplanes they are intended to house in a hangar below-deck contributes something of the carrier complexion to their general cruiser features. The *Honolulu* apparently symbolizes a merging of types and characteristics which to an unprecedented degree is the drift of war vessel design, construction and equipment the world over. The *Wichita* is the last of 18 cruisers built under treaty terms. Chief among the commissionings recorded were the 10,000-ton light cruisers *Brooklyn* and *Philadelphia* of fifteen 6-inch gun armament in five triple turrets, the aircraft carrier *Yorktown* and the 1,500-ton destroyers *Mugford, Fanning, McCall, Craven, Ralph Talbot* and *Patterson.*

SPECIAL BOARD ON BATTLESHIP PLANS

A special board on battleship plans, the members of which are prominent ship constructors and marine engineers, was announced on Oct. 7 by Secretary of the Navy Swanson. The board has been delegated to obtain the advice of outstanding experts in various departments of naval construction with a view to co-operative aid in completing the designs of the new battleships *North Carolina* and *Washington.* Members of the board are John F. Metten, president of the New York Shipbuilding Corporation; Joseph W. Powell, president of United Dry Docks Inc.; W. F. Gibbs, naval architect; and Admiral Joseph Strauss, U.S.N., retired. On Nov. 2, the Navy Department announced that bids on construction of an 8,300-ton destroyer tender and a 9,000-ton seaplane tender would be opened Dec. 1 instead of Nov. 17, as originally set; the extension being granted to meet the wishes of prospective bidders. These auxiliaries are two of the six authorized earlier in the year by Congress which appropriated for only two of them, with the specification that one should be built in a navy yard and the other by a private firm.

Charles Edison, Assistant Secretary of the Navy, while in New York in connection with a keel-laying ceremony on Oct. 27, at the Navy Yard in Brooklyn, announced that two motor torpedo boats, somewhat of the type of those already constructed by Great Britain, Italy, Germany and Russia, would be included in the

navy's next annual building program for submittal to the regular session of Congress in 1938. Mr. Edison further stated that, for the fiscal year starting July 1, 1938, Congress will be asked to provide funds for two more battleships, two 7,500-ton cruisers, six submarines and eight destroyers. He too is responsible for the information vouchsafed that two motor torpedo boats of a different type from those for which funds will be asked in 1938 were being built at the Norfolk Navy Yard for the Philippine Commonwealth Government as part of the Island's national defense. The two little vessels have hulls of aluminum alloy.

In order to correct any erroneous impression drawn from a reading and study of the foregoing survey that naval construction activities do not conform to the stated policy of the United States Government to adhere strictly to expired treaty quotas, and with reference particularly to over-age vessel replacements, it may be pointed out that the new construction at present being undertaken, plus that previously authorized and appropriated for, will leave the United States Navy in completed under-age destroyers and submarines considerably below the strength permitted by the Washington and London naval treaties in vessels of those categories.

MATERIAL CONDITION OF FLEET

Vessels of the fleet continue to be in fairly satisfactory condition of material and upkeep, according to the annual report of the Secretary of the Navy. This standard has been attained by devoting approximately one-third of the time of each quarter to uninterrupted upkeep by forces afloat in spite of the time required for gunnery, cruising, fleet problems, tactics, training, and other no less important objects. A few long-standing alterations were made during the year in addition to fulfillment of urgent repairs at navy yards. The new units which are replacing the older vessels are proving themselves to be dependable adjuncts of the fleet. Essential improvements indicated by advances in naval construction and operation are, however, needed on all but the recently constructed ships. Being too expensive to accomplish within the regular appropriations and being in excess of the statutory limit, special legislation is required for their initiation. The necessary bills have been submitted to Congress.

A few of the many special items relating to improvements in design, materials and equipment that have been the objects of research and development during the year include propeller design in order to delay the appearance and evolution of cavitation. Considerable benefit has accrued to both propeller performance and manufacture. A broad program of welding research has been carried forward for the purpose of determining proper technique, proper design characteristics, and the extent to which welding can properly be applied to naval construction. A new design for a 40-foot motor launch has been developed and relative to same an experimental boat is scheduled to be built and tested in service. Tests on different types of aviation crash rescue boats to determine definitely their comparative suitability for this purpose were conducted and completed. Existing designs of electrical equipment used in the current construction programs have been improved by redesigns in specific cases where weaknesses have been disclosed.

In the motorboat field a new design of a 105-horsepower engine has been purchased. Sixty-six units of the type were purchased to meet immediate demands, while construction of patterns, jigs, etc., for the manufacture of the engine was commenced at the Norfolk Navy Yard. The first of the Dieselized motorboats assigned to ships under construction have now reached the fleet, in which connection, preliminary reports on the performance of the engines and the regard in which they are held by the forces afloat have been altogether gratifying. Toward the year end there were indications that President Roosevelt probably would ask Congress to repeal or

modify an act of 1888 prohibiting the Navy Department from scrapping obsolete vessels, thus compelling it to sell them as junk. About a dozen obsolete craft are understood to be disposable one way or the other.

NAVAL CONSTRUCTION ACTIVITIES ELSEWHERE

For the reason that it became necessary both to clarify and state the officially expressed attitude of our country to a free-for-all naval race which began January 1, 1937, and continued unabated throughout the ensuing twelve months, and involving as it did much comparative detail concerning the attitude and kindred activities of at least six world naval powers, it hardly seems necessary by way of introduction to dwell further introductively concerning their known and reported doings during 1937, other than to say that all of them look more or less askance at and with not a little suspicion of the sincerity of our construction policy.

BRITISH EMPIRE CONSTRUCTION ACTIVITIES

A United States Navy Department tabulation of the world's sea-power disclosed on July 28 that the British Empire was far ahead of all other nations, consisting on Jan. 1, 1937 of 181 combatant under-age ships of 1,042,698 tons, 104 over-age of 173,700 tons, and 96 building or appropriated for of 541,190 tons. In second place the United States was represented by 113 combatant under-age ships of 869,230 tons, 212 over-age of 214,000 tons, and 87 building or appropriated for of 335,565 tons. It may be taken as granted that the predominant position of the British Empire on Jan. 1, 1937, was at least maintained throughout the year and may be expected to continue as long as the European menace to the Empire's existence is a reality. Treaty-agreed parity with the United States does not now prevail, nor is it likely to for many months to come, taking cognizance one with another of the whys and wherefores bearing on the diverse courses being pursued by the two signatories concerned.

The break-away from parity with the United States by the British Empire is neither a threat nor a challenge to the former, being generally so understood and accepted; therefore the even and unswerving purpose of the United States to build up through over-age replacement programs its combatant navy to the limits allowed by the Washington (1922), and London (1930) treaties. Winston Churchill on Feb. 18, expressed the hope that the United States would build up its navy to keep pace with Great Britain, keel for keel.

As the first installment of its $7,500,000,000 rearmament program, the British Government on Feb. 16 announced that it would embark almost immediately on the greatest and costliest project of naval construction ever undertaken in time of peace. Scheduled to start in April with the advent of the new financial year, the naval program embraced three new battleships of 35,000 tons; seven new cruisers, two of which would probably be of 9,000 tons and five of 5,000 tons, and two aircraft carriers, probably of 18,000 tons. The three battleships are additional to the two laid down on Jan. 1, 1937 and, correspondingly, the seven cruisers are additional to seven already in the 1937 program, and the two aircraft carriers additional to two laid down under the 1936 program. Battleships are expected to form the backbone of the British program; no fewer, probably, than ten of these will be built, raising the available units in that category to twenty-five of varying age and fitness.

Of the $7,500,000,000 which Great Britain believes she will have to spend on armaments during the next five years, at least $3,000,000,000 will be devoted to buttressing the navy and improving its strategic bases at home and overseas. Three of the five battleships to be constructed will be named *Jellicoe, Beatty,* and *Anson.* Admiralty chiefs were credited at the beginning of 1937 with the expectation that more than 30 combatant craft of all categories would be completed during the year. Six of the 30 belong to the cruiser class, five of them displacing 9,000 tons and one 5,200 tons.

The 9,000-ton vessels mount twelve 6-inch guns as well as eight 4-inch anti-aircraft guns. The 5,200-ton cruiser mounts six 6-inch guns. One flotilla leader, eight destroyers, three submarines, six sloops, one surveying ship, and six fast motor torpedo boats, were embraced in the forecast.

On March 3, the titanic scale of British rearmament was again emphasized by the naval estimates for the new fiscal year, which called for the construction of more than 238,000 tons of fighting craft. The estimates provided for the expenditure of $525,000,000 during the fiscal year begun April 1. The new construction program, besides the three battleships, seven cruisers, and two aircraft carriers already noted, embraces 16 destroyers of 1,350 tons each and 35 knots speed, seven submarines of the patrol type, four sloop mine-sweepers, three coastal sloops, and 10 of the fast new motor torpedo boats which are credited with a speed of 36 knots and the ability to remain at sea for 10 days at a time without returning to their base.

Considering the magnitude of the program, only a relatively small part of the year's expenditure was to be applied to new construction. Millions more were to be poured into modernization and reconditioning of existing ships, so that by the time the rearmament program is realized, Great Britain will have not only 10 new battleships but virtually a new battle fleet. Reconstruction from top to bottom on existing 10,000-ton cruisers is being undertaken concurrently with the modernization of existing battle ships. It is understood that deck armor is being added and that the sterns are being modified to compensate for the additional weight. When the 16 destroyers are completed, Great Britain will have a total in that category of 182, inclusive of 63 of overage.

The most mobile fleet in the history of the British Empire is envisaged. While a two-power standard will be maintained, uncertainty exists as to where the next emergency may develop, therefore preparations are being made to meet it anywhere, whether in the North Sea, in the Mediterranean, in the Far East, or in all three places at once. Noteworthy among the year's launchings was that of the airplane carrier *Ark Royal,* new 22,000-ton and $15,000,000 ship, constituting the first British carrier, except the *Hermes,* of 20 planes capacity, to be specially designed for the purpose. Contracts have been placed for two additional carriers—*Illustrious* and *Victorious*—authorized in the 1936 program—which will be similar to the *Ark Royal;* and still two more are authorized. The *Ark Royal,* of the flush deck type, will have a speed of 30 knots and will mount an undisclosed number of 4.7-inch guns. Virtually the entire vessel length of 685 feet is available as a plane runway. A plane capacity of 70 has been assigned.

FRANCE

France on June 25 ratified the London Naval Treaty of 1936. Occasion also was made to recall the reservations of France with regard to Class A cruisers. To Germany and Russia there has been allowed some latitude in building vessels of that category but should these countries evidence a disposition to concentrate on such construction, France has served notice that she will not restrict her building. France appears somewhat dubious concerning the treaty clause which provides for previous notice and exchange of advance information regarding projected naval programs, most of the usefulness depending upon the integrity with which the clause is observed.

ITALY

Details of the development and growth of Italy's naval strength have been more or less closely guarded. It is believed, however, that 100 submarine craft of varied size and combative equipment were afloat at the year end. Destroyer leaders, destroyers, and swift torpedo boats of varying tonnage and armament are believed also to constitute factors of importance in her active resources, aside from similar type craft under construction and projected. In the cruiser category Italy is credited with

seven 10,000-ton treaty class vessels, 12 modern light cruisers, and several, probably, of less modern although hardly obsolete type. In the past, battleships have not been the backbone, as it were, of the Italian navy; however, with the construction in progress of the *Littorio* and *Vittorio Veneto,* it may be assumed that Italy has definitely committed herself to battleships as constituents of a properly balanced fleet.

On July 25, the 35,000-ton battleship *Vittorio Veneto* was launched at Trieste, and on Aug. 21, launching of the *Littorio* took place at Genoa. Completion of these two units will give Italy six capital ships in all, four of pre-war type having been modernized. It has been mooted that a third and fourth new battleship will rise from the vacated berths of the *Vittorio Veneto* and *Littorio.* Scheduled for service in 1939, those two ships will be the mainstays of Italy's fleet which on July 27 was credited with 23 cruisers, 22 flotilla leaders, 44 destroyers, 51 torpedo boats, 98 submarines, and other smaller units in addition to four 24,000-ton capital ships, two of which, the *Cesare* and *Cavour,* have been completely renovated; and two others, the *Doria* and the *Duilio,* being rebuilt to improve their speed and equipment. On Nov. 20, three 1,026-ton submarines were launched at the Monfalcone shipyards.

GERMANY

There is good reason to believe that a German navy of 420,000 tons will be achieved by 1942. It will embrace no fewer than five 35,000-ton battleships, two 26,000-ton battleships, the existing three 10,000-ton 'pocket' battleships, 14 light and heavy cruisers inclusive of three 10,000-ton vessels built solely for cruiser service and equipped with lighter guns than the 'pocket' battleships. This projected navy will be protected by 40 destroyers and torpedo boats, and two airplane carriers. Submarines will be built up to the limit of the agreement to keep within the tonnage ratio of 35 per cent of the British submarine fleet. New construction begun during 1937 included a second battleship of 35,000 tons, a second aircraft carrier of 19,500 tons, and 14 submarines. These latter belong to two different patterns, representing 740 tons and 517 tons. Other construction embarked upon during 1937 included two swift motor torpedo boats, 12 mine sweepers, two submarine depot ships and two speed boat depot ships. Among other launchings of combatant craft during the year, two 1,625-ton destroyers and two 10,000-ton cruisers were the most noteworthy.

SOVIET RUSSIA

Presumably fearful of the ambitions of Japan in the Far East, Soviet Russia has been giving serious thought to the matter of strengthening its naval prestige there through the addition of two 35,000-ton battleships. It is believed, however, that the project is too ambitious in view of the fact that Russia never had facilities for such building and has not the means now to build up a modern fleet. In a word, Russia's sea power requirements are considered to be met by the destroyers and submarines which she has built and is building.

Early in the year, the Soviet Union agreed to adhere to the provisions of the 1930 London Treaty governing the wartime action of submarines against merchant vessels. Thus all the great powers have formally accepted the terms of international law for humanizing submarine warfare. It was revealed on April 16, that a project for the construction in the United States of the fabricated parts and equipment of a battleship armed with 16-inch guns for Soviet Russia had been broached to the State Department at Washington. The size of the vessel was not disclosed. Announcement to the effect was the answer apparently to reports connected therewith that plans and technical expert assistance were being sought for the construction of two 35,000-ton battleships. The first reaction of the State Department is understood to have been discouraging. There is no prohibition of the employment of American designs for foreign naval vessels unless military secrets are involved, as most of the

information is being freely exchanged with other Powers under naval treaty terms. The plan was advanced early in March to the Arms Control Board of the State Department by two American concerns, one a shipbuilding firm and the other an export company. No negotiations had taken place between the United States and Soviet Governments. On Oct. 6, when the State Department made public its monthly report of licenses issued for the export of arms, ammunition and implements of war, it disclosed that Soviet Russia had obtained licenses during September for munitions valued at $10,057,920, of which $5,275,100 fell under the general description of "vessels of war of all kinds including aircraft carriers and submarines, and armor plate for such vessels."

In view of the foregoing development, the Soviet Government evidently has initiated a program looking to the purchase of prefabricated parts in the United States for the construction of one or more battleships and their armament, but is cloaking the details in secrecy. Issuance of licenses by the National Munitions Control Board in Washington does not imply that the products have been or will be exported, for the licensing is mandatory by law when application is made in all cases where export would not violate the provisions of the Neutrality Act. Defense of its Baltic and Far Eastern borders is ostensibly the principal reason for Soviet Russia being a contender in the current world naval armament scramble.

JAPAN

Although naval construction has increased by leaps and bounds elsewhere since Dec. 31, 1936, Japan has been able to so keep secret her building activities that if known information is to be trusted, she has on the ways or authorized 10,000 tons less in combatant ships than she had when treaty restrictions went awry. Seldom if ever has a nation been able to cloak its naval plans and activities in such complete secrecy. That Japan has a definite and ambitious construction program is certain, but just what it is and how much of it is actually under way poses questions that the naval intelligence services of the United States, Great Britain, France, Italy, Germany and Soviet Russia, would like answered. The United States, Great Britain and France are understood to be entirely without authentic information. Italy and Germany, both friendly to Japan in the existing critical world situation, may be better informed, but if so, they too are maintaining secrecy. The latest bulletin of the United States Naval Intelligence Service gave a true picture of what is going on in the shipyards of the United States, Great Britain and France, but it is virtually a blank so far as Japan is concerned. It is believed too that the bulletin figures are well under the actual totals in the references to Italy and Germany. The qualifying words, "all available information," indicate rather significantly relative to Japan, Italy and Germany, that reliance on reported naval construction activities must be placed at a generour discount.

BRAZIL, ARGENTINA, CHILE, COLOMBIA

It was known at the beginning of 1936 that Brazil had been negotiating for the purchase of several United States war vessels, among them being some decommissioned for one reason or another. In carrying out a naval rebuilding program to cost $20,000,000 which was voted two or more years ago, Brazil has already purchased four submarines in Italy and three tankers in England. She claims to need cruisers, destroyers and scouting craft, both decommissioned and entirely new; also, smaller vessels which, according to report, would be bought unassembled or semi-finished for completion at the Ilhas das Cobras yards in Rio de Janeiro.

On Aug. 11, the State Department at Washington moved to reassure Argentina and Chile, both of which had been critical of the project for leasing six United States destroyers to Brazil. When the Administration

decided to request Congress for authority to lease decomissioned destroyers to all Latin-American countries that might wish to make such contracts, the State Department notified all Foreign Offices in the American hemisphere of its decision and the circumstances. Thus, it was believed that the lease to Brazil which alone had applied for destroyers would not be misunderstood. The explanation, in substance, was that the ships to be leased were old, would be used only in peace-time training of personnel, would be subject to recapture by the United States if circumstances in any way warranted, and that the same terms would be open to all American Governments.

Indefinite postponment of the leasing of six over-age decommissioned destroyers to Brazil for training purposes was the outcome of a conference between Secretary of State Cordell Hull and the Argentina Ambassador who requested time for further discussion of the proposal. As the matter now stands, it is problematic as to whether the project will ever go through.

Argentina's seventh destroyer building in a British shipyard in 1936 was launched on Sept. 23. These destroyers, intended to replace out-of-date craft of the like type, represented an outlay of $14,000,000. Including the cost of construction in Vickers' shipyards of the cruiser school for midshipmen scheduled to replace the old frigate *Sarmiento,* expenditure in Great Britain on Argentina's navy account approximated $24,000,000. Chief Admiral of the fleet Olegario del Rio admitted on Aug. 26 that the Government of Chile was studying details in connection with the contemplated purchase of cruisers as the initial move toward modernization of the navy.

On Nov. 23, War Minister Plinis Mendoza Mi Mira informed the Colombian House that the Government was considering the proposal of a Netherlands firm to purchase for a minor European nation two British built destroyers, constituting virtually the whole Colombian navy. The proposal contained a condition against the resale of the vessels to any South American nation. The destroyers were acquired from Portugal during the Leticia controversy with Peru.

NAVAL AERONAUTICS

By Arthur B. Cook

Rear Admiral U.S.N.; Chief, Bureau of Aeronautics, Navy Department

BUREAU ACTIVITIES AND OBJECTIVES

The activities of the Bureau of Aeronautics, Navy Department during the fiscal year 1937, in the development, maintenance and procurement of aircraft and aeronautic material and in related matters have proceeded in a generally satisfactory manner. Aircraft have been procured in accordance with the program developed from the provisions of the Vinson-Trammell Act authorizing aircraft in numbers commensurate with a Treaty Navy. The annual expansion required to complete this program by 1940–42 as authorized has continued.

The shore facilities, to support the operating aircraft, continue to lag behind the authorized Treaty Navy expansion and serious congestion continues at operating and repair bases, and has reached the point where it may prove impracticable to operate all carrier aircraft on the West Coast with the Fleet until additional facilities become available. The development of the Naval Air Station at Alameda, Calif., now authorized, will relieve this situation appreciably.

The scope of operations of the Aircraft Scouting Force has been limited seriously by a lack of seaplane tenders. Realization of the auxiliary building program which was intended to meet the develop-

ing demands for seaplane tenders has been delayed to such an extent that an acute emergency exists to fulfill immediate needs of the Commander Aircraft Scouting Force. The situation is especially aggravated because of the advancement in patrol aircraft themselves which now admit of considerably extended operations. The possibilities of present squadrons cannot be realized, nor even explored, until the deficiency of tenders is overcome. For the above reasons the Bureau of Aeronautics is urging the accomplishment of a plan which will constitute an immediate stop gap, but can in no way be considered as a substitute for the auxiliary building program, consummation of which alone will place patrol plane squadrons in a fleet-based status. The temporary immediate program being recommended calls for the commissioning and conversion of the *Aroostook*, the completion of conversion of the *Owl* for duty as a tender and the transfer and conversion of three destroyers when ready for decommissioning to the Commander Airchaft Scouting Force for temporary use as substitute patrol plane tenders. This program is being recommended for the sole purpose of alleviating as expeditiously as possible the actual existing shortage of patrol plane squadrons.

In meeting the Operating Force Plan, the Bureau has endeavored to equip the forces afloat with aircraft and equipment of proven reliability and advanced design. Illustrative of the results of these endeavors is the new long range patrol bomber *PBY*, airplanes now being furnished the Fleet as replacement for older types, and to equip new squadrons.

Appropriate government research and test agencies, as well as the industry, have been utilized to carry out experimental projects as practicable and as funds permitted. This experimental program has resulted in marked improvements in airplanes and engines and varied aeronautic equipment. New aircraft designs have been sought on a competitive basis from the industry, and aircraft of advanced design are becoming available for procurement in quantity.

New airplanes of superior performance are now under quantity production to replace older types of carrier and tender-based airplanes and will represent very marked improvement in speed and range over the planes they replace.

AIRCRAFT OPERATIONS

On June 30, 1937 the Navy had 927 service and 195 obsolescent aircraft on hand and 820 new aircraft on order. This represents an increase of 216 airplanes over the total on hand and on order as of June 30, 1936. Of the large number on order the majority are due or overdue for delivery and will be delivered within the early months of 1938. This is due to an almost universal failure of manufacturers to allow sufficiently for the time factor in building the more recent types of airplanes having increased complication of design and need for special material and parts.

During the year the U.S.S. *Langley* was assigned to Aircraft Scouting Force, and her squadrons, Scouting Squadron Four and Fighting Squadron One, were transferred to the *Saratoga* and *Lexington* respectively.

Patrol Squadrons 11, 12, 15, 16 and 17 were commissioned and assigned within the Scouting Force. Squadrons of the aircraft carrier *Yorktown* were commissioned on April 1, 1937, and *Enterprise* squadrons on June 1, 1937.

The policy of delivering new aircraft by air and of ferrying some old aircraft to East Coast stations for overhaul and return was continued. This involved a total of 375 transcontinental flights during the fiscal year and, in addition, 24 new patrol planes were flown from San Diego to Pearl Harbor and 12 new patrol planes from San Diego to Coco Solo.

Aircraft One, Fleet Marine Force, flew from Quantico to San Diego and return for the purpose of participating in Fleet landing exercises in January–Febuary.

In the lighter-than-air field ac-

tivities continued to be concentrated at the Naval Air Station, Lakehurst, N.J. where four non-rigid airships operated in a program of training and experimentation which included exercises with submarine activities. The U.S.S. *Los Angeles* was used in a non-flight status for instruction and for experiments in mooring and handling tests.

There has been a revived interest in non-rigid airships, or blimps, and a growing appreciation of the value of this type for certain activities. Funds for two new non-rigid airships were included in the 1938 Appropriation Bill.

RESERVE AVIATION

The training of aviation cadets, Naval Reserve, is doing much to relieve the acute shortage of regular officer pilots available for naval aviation. The training of these cadets was at the Naval Air Station, Pensacola, Fla., during the year and 297 were qualified and sent to duty in Fleet units. It is expected that approximately 200 cadets will be ordered to the Fleet during the fiscal year 1938.

Twenty-five aviation cadets of the Marine Corps Reserve successfully completed the flight course at Pensacola and were designated naval aviators. Seven of these were discharged to accept appointments as second lieutenants in the regular Marine Corps for aviation duty. In addition, 40 candidates were listed and assigned to elimination flight training of which number 34 were appointed as aviation cadets in the Marine Corps Reserve.

The placing of a large number of Fleet Reserve aviators on extended active duty for the purpose of augmenting the complement of regular naval aviators in connection with the training of aviation cadets at Pensacola made it possible to provide a considerable number of fourteen-day training periods for volunteer aviation reserve officers who previously had been deprived of this training due to lack of funds. This measure stimulated the interest of the volunteer group and at the same time provided badly needed refresher courses.

With a view to affording Reserve personnel valuable training in the major overhaul of aircraft and engines the Bureau of Aeronautics has been able to continue the provision of additional machine equipment. It is hoped that during the fiscal year 1938 the activities based at regular Naval Air Stations will be completely equipped in order that major overhaul may be conducted as at the independent Naval Reserve activities.

AVIATION SHORE ESTABLISHMENT

The facilities of Naval Air Stations and Fleet Air Bases have been developed to the fullest extent possible with the funds available. The funds of the regular Naval Appropriation have been supplemented by those allocated by the Works Progress Administration.

Projects of major importance completed include barracks and mess hall for 1,000 men and quarters for officers' families and for Chief Petty Officers at the Fleet Air Base, Pearl Harbor, T.H. These quarters provide much needed accommodations.

At the Naval Air Station, Pensacola, Fla. the development plans comprised an almost entire rebuilding of the station. The most essential of the buildings have been completed and are now occupied. These improvements greatly increase the Station's facilities for housing of officers and men as well as for the maintenance of planes and flight operations which are very necessary for training purposes.

Since the taking over of Rockwell Field from the U.S. Army much effort has been spent in adapting the buildings and facilities on North Island for the Navy's use, particularly with reference to accommodations for the large number of cadets at the station.

A large amount of development work is also being done on the North Beach area to provide necessary facilities for the parking and handling of the large flying boats. This work consists in the building of two sea-

plane ramps, the grading and paving of the parking area, the installation of fire protection system, water system, lighting, etc., and provision of six gasoline fueling trucks for servicing the patrol planes.

In view of the policy of developing the Naval Air Station at Seattle, Wash. for the accommodation of at least two squadrons of patrol planes, there have been completed an additional wing on the Barracks building, an administration building, and a partial completion of a Bachelor Officers' Quarters, all by Works Progress Administration funds. Plans are actively under way for completion of Bachelor Officers' Quarters and a new seaplane hangar, $320' \times 240'$.

The aviation facilities at St. Thomas, V.I., started the previous year, have been completed to the extent of the available funds, and the Marine Corps Squadron is now actively operating. An item of $125,000 is carried in the current year's Naval Appropriation Act. This money will be used to provide an addition to the hangar, enlargement of the Barracks building, additional catchment area, and certain work on the landing field. Bids for the work were received by the Bureau of Yards and Docks on June 28, 1937, and award of contract will be made shortly.

In pursuance of the policy for developing the Naval Air Station at Alameda, Calif., a general preliminary plan has been approved by the Department. The sum of $1,000,000 for the initial construction work is carried in the current Naval Appropriation Act, and work has been started.

During the past year Works Progress Administration funds in the amount of about $3,882,000 have been allocated for projects at Naval Air Stations and Naval Reserve Aviation Bases. These projects have been mainly for maintenance, repairs and improvements. Work has been carried on steadily through the years and excellent results have been secured.

The Naval Aircraft Factory has continued to operate as a combined experimental and industrial plant. The laboratories are continuously engaged in testing aircraft, engines, equipment and materials used in aeronautics.

Completely equipped workshops are maintained for the manufacture of experimental equipment, for the overhaul of aircraft and equipment and for a limited amount of manufacture of new aircraft and engines. The factory has completed its first order of 85 airplanes and is currently engaged in the manufacture of additional training planes and of scout observation planes.

The new engine manufacturing shop has been completed and placed in operation. The first engine of a production order has been completed, and passed all tests. The remainder of the order is now in production.

The principal addition to the factory during the year was the completion of improvements to the flying field and the provision of additional facilities for the test, both in the laboratory and in the air, of improved equipment and methods for handling aircraft on board ship.

FINANCIAL

The amounts shown in the table next page were appropriated for the fiscal year 1937 under "Aviation, Navy." For the purpose of comparison the amounts appropriated for the fiscal years 1935 and 1936, including allotments from emergency appropriations for 1935, are stated, together with the number of aircraft being operated in the Naval Aeronautic Organization.

Due to the large successive increases in the number of operating airplanes for the fiscal years 1936 and 1937, serious difficulty was experienced during both years in meeting the maintenance and operating requirements of the Naval Aeronautic Organization. While this was partially relieved in 1937 by the larger appropriation received that year for maintenance and operation, the effect of this increase was offset by the rapid expansion in the number of operating airplanes in 1937 and by the rising cost of materials.

	1937	1936	1935
Navigational, Photographic, Aerological and Radio Equipment	$ 700,000	$ 498,200	$ 672,152
Maintenance and operation, Aircraft and Air Stations	14,408,270	11,020.450	10,066,800
Experiments and Development	2,500,000	2,498,000	1,773,368
Aircraft Construction	20,980,000	26,715,660	6,131,000
Total, "Aviation, Navy"	$38,588,270	$40,732,310	$18,643,320
Emergency Appropriations:			
Aircraft Construction			12,902,772
Expansion of Aircraft Factory			2,708,800
Grand Total	$38,588,270	$40,732,310	$34,254,892
Number of Operating Aircraft	1238	958	774

Funds provided for construction of aircraft for 1937, as shown above, were applied toward procurement of necessary replacement airplanes and procurement of those additional airplanes required to meet the enlarged Fleet aircraft organization provided for by present authorization. In obligating these funds, the Bureau made available to the Naval Aircraft Factory sufficient funds to cover cost of manufacture of 10 per cent of the airplanes procured in 1937, together with engines for such airplanes. These airplanes and engines are being manufactured at the Naval Aircraft Factory in accordance with a provision contained in the Navy Treaty Act approved March 27, 1934.

MAINTENANCE

As compared with the fiscal year 1936, the total number of hours flown in 1937 increased 26.5 per cent. The total output in repairs of airplanes and engines increased 25.7 per cent, while the increased overhaul expenditures, including labor, material and overhead, increased only 22.2 per cent. It will thus be seen that the efforts of the Bureau toward obtaining increased output without proportionate increases in expenditures are slowly taking effect. The above is all the more noteworthy when consideration is given to the fact that cost of materials increased approximately 13 per cent during 1937.

Efforts have been continued to increase the operating interval of airplanes between overhauls, and this interval actually will be increased an average of about 25 per cent for all operating airplanes during the fiscal year 1938.

Aircraft overhaul facilities have not been enlarged in proportion to the rapidly increasing number of airplanes operating. Overhaul shops are now congested, and any attempt further to increase the output of present facilities to any great extent will prove inefficient and uneconomical. Unless the proposed aircraft overhaul shops at Alameda are rushed to an early completion, the undesirable necessity must be faced or resorting to night shifts in shops now in use.

The Maintenance Conference was held in the Bureau of Aeronautics following the annual assembly and repair inspection tour of all major continental overhaul bases. By the exchange of information concerning shop practices and overhaul methods, the conference has become an invaluable aid in assisting the aeronautical overhaul organization materially to increase its efficiency.

With the advent of engines designed for 100-octane gasoline in sight, the Army and Navy acted jointly in sponsoring the development of a fuel which would meet this requirement. The development was successful, and during the fall of 1936 a gasoline became available which, with the use of practically no tetraethyl load, is rated at 87-octane and which can be brought to

100-octane by the use of less lead than was used with the old gasoline to obtain 87-octane. The new fuel was given extensive service tests.

At the time the new gasoline was purchased in quantity there were only two refineries capable of producing it and the cost per gallon was about eight cents greater than the old type. Due to its use by the Army and Navy, there are now seven refineries which can produce the new fuel, with several others which are installing equipment for it, its use by the Army and Navy resulting in a reduction from eight to three cents. It is anticipated that the new fuel will be used exclusively in high-powered engines, both military and commercial, within the next two years.

ENGINES

The policy of supplying the Service with engines of maximum performance consistent with reliability and endurance has been maintained by continuous development and improvement of advanced types of engine in co-operation with engine manufacturers, together with an uninterrupted program of proof testing. The latter includes not only laboratory tests, but also standardized flight service tests in new airplane types, supplemented by the necessary special tests required to cover the needs of naval aviation. As a result of this policy and based on the results of the test program and of developments in the experimental field, it has been possible to provide a growing list of improvements to Service equipment. The two-row radial engine has continued its service history with marked success as evidenced by the recent mass long distance flights of large patrol airplanes.

Late models of all current Service type engines have shown gratifying increases in power output and altitude ratings. Crankshaft torsional vibration dampers and full pressure lubrication to cylinder valve gear, now standard in recent Service types, have been so satisfactory that similar equipment has been supplied to certain earlier engine types when mechanical characteristics and economical considerations warranted such action.

Similar development and test programs are in progress on accessory devices to meet the increasing complexities of modern power plant installations, particularly as regards automatic regulation, for the purpose of minimizing the demands upon the pilot's attention made by the power plant while in flight. The entrance of additional manufacturers into the accessory field and the improvement of present standard type devices have been among the recent developments. Improvement in equipment and methods for starting under cold or wet weather conditions has continued to be actively pressed. In the propeller field the Service application of automatic constant speed propellers has been continued. Aircraft engine fuels and lubricants, one of the critical foundations upon which engine improvement is built, has been continued as the subject of an extensive development program.

ADVANCES IN AERONAUTICAL SCIENCE

While the program of development and improvement has been pursued the Bureau has also kept abreast of the advances made in aeronautics and the related sciences.

Experimental airplanes have been procured to determine their suitability for service production. A sufficient number of this type of plane was contracted for during the year to meet the needs of the Service and to make it possible to continue orderly procurement in the immediate future.

During the fiscal year approximately 256 airplanes and 494 engines were delivered. Design competitions to stimulate development, and procurement of experimental types of aircraft, and competitive bidding to control costs of production models, have been fostered by the Navy Department.

Marked advances have been made as a result of basic research co-ordinated with Service tests on various textiles, metals, protective coatings

and shop processes. Spot welding, flush riveting, light weight alloys and similar items have reached a high state of development and are now in production. An outstanding contribution to the advancement of aeronautics has been the development and adoption of a protective treatment for magnesium alloys which will doubtless increase the use of such materials. Light weight cotton fabrics of domestic origin have been developed which appear to be satisfactory substitutes for parachute silk. In the equipment field has also been included the development of oxygen breathing apparatus of efficient design for high altitude flying.

A definite lowering in cost with no sacrifice in efficiency has resulted in the development work carried out in connection with light weight fuel, oil, and instrument line fittings.

The application of recent aerodynamic data on the design of Naval aircraft, has resulted in very gratifying progress marked with improvement in efficiency and general performance. As it becomes practicable to incorporate the research findings of the National Advisory Committee for Aeronautics, further improvement is anticipated. Fullest co-operation has been received from this Committee on all questions involving pure research and on many problems concerned with particular design features. The work involved has included extensive tests in their Full Scale, Free Spinning, High Speed, Propeller Research, and Atmospheric Tunnels, ranging from simple wing models to the investigation of air flow and control on full scale airplanes. The new Navy Model Basin is expected to supply ample facilities for testing systematic design modifications and so remove the severe handicap to rapid progress now being encountered by the Navy because of its own limited facilities.

NAVAL EDUCATION

By Carroll Storrs Alden

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A CONTINUING PROCESS

It is a common observation that when a school boy or college youth interrupts his studies to earn funds required for subsistence or to secure a little practical experience, he fails more often than not to return to the classroom. Adolescence is for him ended and further education is only that gained from success and failure in business or a professional activity. For the naval officer or enlisted man the initial education ends early—too early, some think, and they enumerate all the subjects with which those who man our fleets should have at least a passing acquaintance. Fortunately, however, the Navy Department has made provision for subsequent periods of study. For the officer, study comes at approximately ten-year periods: after the Naval Academy, at special professional schools, the Postgraduate School at Annapolis, civilian schools of technology and universities, and the Naval War College; for the enlisted man, it is offered at special training schools and through prescribed courses that may be pursued aboard ship to gain higher ratings or promotion. This is in addition to the education that officers and enlisted men gain from routine duty and from efforts to better themselves in their profession. The trend of recent years is to provide a basic course required for all, and then to supplement this with specialized instruction for those applying for it and showing ability and fitness.

THE UNITED STATES NAVAL ACADEMY

Appointment of Midshipmen.—The established method of obtain-

ing a commission as a line officer in the fleet is through the Naval Academy at Annapolis. All students there have an official appointment as midshipmen and they gain this by being properly nominated and meeting the entrance requirements. The following have the privilege of nominations: each United States Senator, Representative, and Delegate, four candidates (the candidates on meeting the entrance requirements have their appointment for four years, and further nominations cannot be made until vacancies occur through graduation, resignation, etc.); the President, four candidates from the District of Columbia, and also 15 candidates selected annually by competitive examination, commonly from the sons of officers in the Army, Navy, and Marine Corps. In addition, 25 may be appointed annually from the Naval Reserve and the Marine Corps Reserve; 20 annually from honor graduates of military schools and the Naval Reserve Officers' Training Corps; and 100 annually from candidates selected by competitive examination from enlisted men in the fleet. Still further, a limited number may be appointed from among the sons of officers, soldiers, sailors, and marines of the Army, Navy, and Marine Corps killed in the World War or dying as a result of wounds or injuries contracted in the War; and from candidates in Puerto Rico and the Philippines properly nominated.

Qualifications.—Candidates must be American citizens, be not less than 16 nor more than 20 years of age on the first of April of the year they expect to enter, and meet the prescribed physical and mental requirements. The mental requirement is similar to that of the leading scientific and technological schools, and all candidates are subject to the rather exacting entrance examinations except those who have satisfactorily completed a year's study in an accredited university, college, or technological school and who have taken certain courses in subjects indicated. Information on these particulars is set forth in the pamphlet, "Regulations Governing the Admission of Candidates into the United States Naval Academy," which may be obtained by applying to the Chief of the Bureau of Navigation, Navy Department, Washington, D.C., or to the Superintendent of the United States Naval Academy, Annapolis, Md.

Status and Pay of Midshipmen.—A midshipman is an officer in a qualified sense. He is subject to the rules and regulations of the Navy Department, but is ordinarily not sent to sea except during the summer on a practice cruise. On being admitted, he makes a deposit of $100, which is used in part payment of the uniforms, clothing, and textbooks he immediately requires. The deposit is not refunded but there is no further expense. He takes an oath to uphold and support the Constitution, and his pay begins. This is $780 a year and 75 cents a day for rations. Two hundred and fifty dollars each year is set aside so as to provide the uniforms of the commissioned officer that will be required after graduation. The larger part of his pay is used to meet the general expenses incidental to being a midshipman. A small allowance he may draw each month for spending money, and provision is made so that he may have funds for sightseeing in foreign countries on the summer practice cruise and also for going home at the time of the annual September leave.

Curriculum.—The four-year course of study corresponds in general features with that of leading colleges and technological schools, except that the curriculum is virtually the same for all and it has as its sole aim the education of naval officers. The work is distributed among the following departments: Executive, Seamanship and Navigation, Ordnance and Gunnery, Marine Engineering (including mechanical drawing and naval construction), Electrical Engineering (including chemistry, physics, and radio), Mathematics, English, History and Government, Languages, Hygiene, and Physical Training. The first five are strictly professional and they give instruction that is both theoretical and practical. Drills in these departments have an important part in the daily

routine during the academic year, from the last of September to the last of May, and occupy most of the time during the summer. The newly entered midmanship spends all of his first summer at the Naval Academy and is taught infantry drill, rowing, swimming, and firing on the rifle range. The last five departments mentioned deal with the fundamental principles regularly taught in their fields elsewhere, but their courses are planned so as to be closely related to the future naval officer. The Executive Department is the one that is most intimately associated with the daily life of the midshipmen, and is in charge of all formations, infantry drills, extra-curricular activities, entertainments, maintenance of health and high moral standards, teaching of thrift and personal economics, inculcation of responsibility and sense of duty, and indoctrination in naval customs and principles of leadership. The Physical Training Department teaches symmetrical physical development, correct posture, swimming, and athletic sports. All midshipmen on graduation are awarded the degree of Bachelor of Science.

Summer Practice Cruise.—Midshipmen of the First Class and the Third Class, totaling 1,024, departed on June 4 for a three months' cruise to Europe. For this in 1937 three battleships were assigned, *New York, Arkansas,* and *Wyoming,* and they visited Kiel, Germany, Funchal, Madeira, and Tor Bay, England. During the eight days the squadron lay at anchor in Kiel, midshipmen were granted leave of four days so as to go on conducted tours: some to Berlin; others to Hamburg, Hildesheim, Eisenach, Weimar, and Lubeck; and still others to Dusseldorf, Cologne, Koblenz, Heidelberg, Frankfurt, and Hildesheim. In addition to this, many obtaining short leaves went on local tours to Hamburg or to Lubeck or to Flensburg. Similarly when the squadron lay at anchor in Tor Bay, some midshipmen spent their leave in London, and others took extensive motor coach trips through Bath, Wells, Glastonbury, Stratford, Oxford, and London. Meanwhile the Second Class of 626 midshipmen, which spent a considerable part of the summer in Annapolis, also had a coastal cruise, six destroyers being assigned for the purpose, and taking the entire class, one third at a time, for practice at sea. The other two months of the summer, at the Naval Academy, they devoted to aviation, navigation, and executive duty. In aviation each midshipman had ground work instruction and also ten hours or more of airplane flight, when he had charge of almost everything except handling of the controls.

Faculty and General Aims.—The administrative and teaching staff of the Naval Academy is composed of officers from the fleet, detailed for a two—or three—year tour of duty, and also of civilian professors and instructors who commonly have a much longer tenure. Public lecture courses bring university professors and men of affairs distinguished in history, literature, economics, and government. The Naval Academy maintains high scholastic standards, but above all else it is a school of leadership. It aims to develop military and personal character, and exists, as the present Superintendent has stated, "to educate and train officers to fight the United States Fleet." Believing that love of the sea is an essential characteristic of the successful naval officer, the administrative officers of the Academy have emphasized the water activities and have made every effort to improve the floating equipment for training and recreational purposes. To this end, they have secured for the training of midshipmen the new gunboat *Erie,* several destroyers, and a submarine. Also they have obtained additional small boats for drill in seamanship, nine additional knockabouts for sailing, as well as five 50-foot motor launches, and three new starboats. The fast cruising yacht *Vamarie* has been presented to the Academy for the use of midshipmen. Further, midshipmen have been encouraged to build their own small boats. Their boat club increased from 250 members to 599 during the year.

GRADUATE INSTRUCTION

General and Specialized Study. —Classroom instruction gives place to more practical considerations when the midshipman is graduated from the Naval Academy and receives his commission as an officer. But there are still many periods in his career when he again courts his books and becomes the student. Before each promotion in rank, he must pass a qualifying examination and at fairly regular intervals he has opportunity to attend special schools for advanced study. Officers desiring to enter certain of the staff corps may volunteer after completing their first two years of sea duty. Those selected as assistant naval constructors are sent to the Massachusetts Institute of Technology for three years; those selected as assistant civil engineers are sent to the Rensselaer Polytechnic Institute for three years; and those selected as assistant paymasters are sent to the Naval Finance and Supply School for one year. It is part of the general educational plan of the Navy Department to send all junior officers of the line, on completing about the first seven years of sea duty, to the Postgraduate School of the Naval Academy to take the General Line Course, but the needs of the fleet and the shortage of officers combine to reduce the number.

In 1937 118 student officers took the first year course, and 93 continued at the school for the second year of instruction. From the group who had completed this second year a very much smaller number, 37, were selected for a third year of study at a university or school of technology specializing in design and production. The General Line course prepares officers for duties as heads of departments aboard ship and for general executive duties. The basic course is the same for all in professional subjects and also in economics, American diplomatic policy, and international relations. This is supplemented by a special course in the field in which the officer is majoring: navigation, communications (operations), marine engineering, ordnance and gunnery, aeronautical engineering, radio engineering, and aerological engineering. Certain officers on duty in the Judge Advocate General's Office, Washington, are designated to take a three-year course of law at the George Washington University. A few especially qualified are sent to the Orient to study the Japanese or the Chinese language, and a few also to Riga to study the Russian. A large number also receive instruction to the end that they may acquire especial knowledge and skill in one of the following: submarines (New London, Conn.), torpedoes (Newport, R.I.), optical instruments (Navy Yards, Washington, D.C., and Mare Island, Calif.), and gyro compass (Navy Yards, New York and Mare Island). Incidental to the aviation training given to midshipmen at the Naval Academy is an examination to determine who are physically qualified for aviation. Two years after graduation ensigns interested in heavier-than-air aviation go to Pensacola and take an 11-months' course for pilots. Those interested in lighter-than-air go to Lakehurst. During the year 266 officers of the Navy and Marine Corps were under aviation training and 84 qualified as naval aviators; also 785 aviation cadets were under aviation training at Pensacola, and 321 qualified as naval aviators.

THE NAVAL WAR COLLEGE

Three courses are comprised in the work of the Naval War College at Newport, R.I.: the junior course for officers below the rank of commander, in the minor operations of war; the senior course, for commanders, captains, and rear admirals, in handling and maintaining large fleets over extended theatres of war and in fleet engagements; and the advanced course, for senior captains and flag officers, in planning and in joint army and navy operations. A few army and marine officers attend the Naval War College at Newport, and a few naval and marine officers attend the Army War College at Washington. The Naval War College also maintains correspondence courses for officers not in attendance at the college in inter-

national law and in strategy and tactics.

ENLISTED MEN

Recruits.—The Naval Appropriation Act for the fiscal year provided for an average enlisted strength of 96,500 men. Of those whose term of enlistment had expired during the year, 81.75 per cent re-enlisted. To fill the vacancies arising from all causes 15,484 men were recruited. chosen from 129,510 applicants. The recruits have their training at one of four stations—Norfolk, Va., Newport, R.I., Great Lakes, Ill., and San Diego, Calif. The initial course for all extends over 12 weeks and is concerned with the following: (a) personal cleanliness, (b) care of clothing, (c) infantry drill, (d) rowing, (e) swimming, and (f) small arms. Upon its completion a certain number who have shown especial aptitude are selected for the service schools to receive training as will be indicated. The others are sent aboard ships to continue their training. After four months of training they may be advanced from the rating apprentice seaman to seaman second class or fireman third class.

Service Schools.—There are three large classes of service schools. "Class A Schools" provide elementary instruction to recruits that will make them immediately useful on board ship and give them the groundwork for the lowest petty officer ratings. The length of courses is from 16 to 20 weeks, except for the School of Music, which continues 104 weeks. One group is studying for ratings such as electrician's mate, gunner's mate, torpedo man, etc.; another group for ratings as radio man, quartermaster, yeoman, etc.; and still another for ratings as machinist's mate, blacksmith, aviation carpenter's mate, etc. "Class B Schools" supplement the training afloat by giving advanced instruction ashore. Courses, from six to 40 weeks' duration, are in fire control, torpedo, electrical interior communication, gyro compass, cooking, stenography, etc. "Class C Schools" give advanced training for particular duty assignments in subjects not normally a part of shipboard instruction. Courses from four to 34 weeks' duration are for the following: aerographers, deep sea divers, dental technicians, aviation ordnance men, submarine men, optical men, etc. Included in the Class C division is the Naval Academy Preparatory School at Norfolk, Va. One hundred enlisted men, if they can qualify in all particulars, are appointed midshipmen in the Naval Academy. As they must pass the same examinations as other candidates, this school affords a needed opportunity for preparation. In the three schools a total of 6,575 enlisted men were admitted and 5,605 were graduated. In addition to this the enlisted forces afloat showed their interest in working for advancement in rating. Courses covering almost every naval activity have been prepared by the Bureau of Navigation. Demand for these has almost doubled over the preceding year; 65,753 training courses and 45,031 courses of a general nature were issued during the year.

THE NAVAL RESERVE

"The Naval Reserve is designed to provide the necessary officers and men for the wartime increase of naval activities during the first 120 days after mobilization. After this time it is expected that the additional requirements of officers and men will be provided by recruiting and selective service and will be trained by the various training stations and schools now in existence or to be set up in case of national emergency." Each naval district is assigned a quota of Naval Reserve officers and men of the various classes for procurement and assignment to mobilization requirements. On June 30, 1937, the Naval Reserve comprised altogether 11,733 officers and 37,138 men. For them appropriations during the fiscal year amounted to $7,868,469; $5,334,303 being devoted to aviation pay and activities and $2,534,166 to the seagoing branch. There are 149 actively drilling fleet divisions of the Seagoing Fleet Reserve located in 82 cities of the continental United States and one in Hawaii. There are also 31 actively drilling divisions of the Avi-

ation Fleet Reserve located in 13 cities. Inspections of the various seagoing and aviation units are made annually by a board of regular naval officers. The Naval Reserve is organized in three divisions: Fleet Naval Reserve, Merchant Marine Naval Reserve, and Volunteer Naval Reserve. The Fleet Naval Reserve is composed of members who are qualified for immediate service with combat units afloat in time of national emergency and consists of seagoing and aviation units together with men who have been transferred or assigned direct from the regular Navy. The Merchant Marine Naval Reserve is composed of licensed officers of the American Merchant Marine. The Volunteer Naval Reserve consists of individual officers and enlisted men available for service in time of emergency in a particular capacity. The Fleet Naval Reserve are required by law to perform weekly armory drills, and in addition 14 days active training duty annually. The Merchant Marine Naval Reserve, in 1937 for the first time, were for a limited number of officers and enlisted men, to have two weeks' training duty with pay; the officers are encouraged to take correspondence courses in professional subjects, and to perform volunteer duty on naval vessels without pay. The latter has not met with much response. The Volunteer Naval Reserve may be permitted on application to perform training duty with or without pay. They may also attend drills but without pay.

NAVAL RESERVE OFFICERS' TRAINING CORPS

Units have been organized and maintained at the following institutions: Harvard University, Yale University, Northwestern University, Georgia School of Technology, University of California, and University of Washington. The total allowed number of students has been 1,200, approximately 200 at each institution, but legislation was enacted during the year authorizing an enrollment of 2,400. Plans contemplate the forming of units at other institutions, these units to begin operations in the fiscal year 1939. The course of study in Naval Science and Tactics averages four classroom hours a week for four years, with at least one summer practice cruise in a combatant ship. The subjects taught are nautical astronomy and navigation, electrical and marine engineering, infantry, ordnance and gunnery, seamanship and communications, naval history, military law, aviation, and administration. During the summer of 1937 sophomores and juniors of California and Washington cruised in the U.S.S. *Colorado* to Hawaii and to the vicinity of Howland Island to assist in the search for the lost flyers, Amelia Earhart and Captain Noonan; the seniors cruised in destroyers to Alaska. Students of the other universities cruised in destroyers to Cuba, Puerto Rico, and Jamaica. Upon completion of the course of study and the award of a college degree, the student is eligible for a commission in the United States Naval Reserve, United States Marine Corps Reserve, or for appointments as aviation cadet. The Chief of the Bureau of Navigation observes in his annual report: "The caliber and ability of the graduates are very high; they are considered excellent wartime officer material, second only to graduates of the Naval Academy."

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

SERVICE SOCIETIES

American Legion, National Headquarters, 777 N. Meridian Street, Indianapolis, Ind.

American Remount Assn., 810 18th Street, N.W., Washington, D.C.

Army Ordnance Assn., Mills Bldg., 17th St. and Pennsylvania Ave., Washington, D.C.

Association of Military Surgeons of the United States, Army Medical Museum, Washington, D.C.

Chemical Warfare Service, Edgewood Arsenal, Maryland.

Military Training Camps Assn., 7 West 96th Street, New York City.

Navy League of the United States, Mills Building, Washington, D.C.

Quartermasters' Assn. of the United States, 923 15th Street, N.W., Washington, D.C.

Reserve Officers Assn. of the United States, 1653 Pennsylvania Ave., N.W., Washington, D.C.

Society of American Military Engineers, 808 Mills Bldg., Washington, D.C.

Society of Naval Architects & Marine Engineers, 29 W. 39th Street, New York City.

United States Cavalry Assn., 1624 H. Street, N.W., Washington, D.C.

United States Field Artillery Assn., 1624 H Street, N.W., Washington, D.C.

United States Infantry Assn., 1115 17th Street, N.W., Washington, D.C.

United States Naval Institute, Annapolis, Md.

PATRIOTIC AND HEREDITARY

Colonial Dames of America, 421 E. 61st Street, New York City.

Daughters of 1812 U. S. National Society, 1461 Rhode Island Ave., N.W., Washington, D.C.

General Organization, Sons of Confederate Veterans, 609 Law Bldg., Richmond, Va.

General Society of Colonial Wars, 1500 Walnut St., Philadelphia, Pa.

General Society of Mayflower Descendants, 420 Lexington Ave., New York City.

Founders and Patriots of America, Fifth Ave. and 59th St., New York City.

National Society of the Daughters of the American Revolution, Memorial Continental Hall, Washington, D.C.

Military Order of Foreign Wars of the U.S., 4 West 43d Street, New York City.

Military Order of the Loyal Legion, 4 West 43d Street, New York City.

Military Order of the World War, 4 West 43d St., New York City.

National Security League, 45 West 45th Street, New York City.

National Society of the Sons of the American Revolution, 1222 16th St., N.W., Washington, D.C.

Naval and Military Order, Spanish-American War Veterans, 184 State House, Boston, Mass.

Pilgrim Society, Pilgrim Hall, Court Street, Plymouth, Mass.

Society of the Cincinnati, 136 W. Lanvale Street, Baltimore, Md.

Sons of Union Veterans of the Civil War, Room 5 City Hall, New York City.

United Confederate Veterans, 1528 Lowerline St., New Orleans, La.

United Spanish War Veterans, Woodward Building, Washington, D.C.

Veterans of Foreign Wars, 1624 H St., N.W., Washington, D.C.

PART FOUR

ECONOMICS AND BUSINESS

DIVISION X

BUSINESS AND FINANCE

ECONOMIC AND BUSINESS CONDITIONS

By S. S. Huebner

Professor, University of Pennsylvania

HIGH HOPES AND DISAPPOINTMENT

Previous issues of The American Year Book explained how 1935 and particularly 1936 gave every indication that the Nation was emerging rapidly from the dismal business depression which reached bottom figures along all important lines by the middle of 1932. According to the Standard Statistics Company index of industrial production, this index had risen to 98.6 for November 1936, as compared with 81.3 for the corresponding month in 1935, 61.6 for November 1934, 58.4 for 1933, and 54.4 for 1932. The improvement of 1936 continued into 1937 until March when this index stood at 107.4. Optimism for continued prosperity prevailed in business as well as in the stock market. Following March, however, there was a slight decline to 105.3 for April, and thereafter a gradual decline to 100.9 for August. Following August, and accompanying a severe collapse in the security market, this index fell to 94.8 in September, to 88 in October, to 79.6 in November, and to an estimated figure of 74.1 for December. As summarized by the Guaranty Trust Company (*Guaranty Trust Survey*, December):

> Despite the many drawbacks in the way of business expansion, remarkable progress was made during the first half of the year; and it was believed by many that the country had finally emerged completely from depression influences and that the prospects were for continued progress. Dulness appeared in some lines during the summer months; but this development appeared to be the usual seasonal occurrence, and it was felt by many that activity would be resumed in the fall.

Up to the last four months of the year retail trade had registered successive monthly gains above the figures for a year earlier, and there were no general indications that the consumption needs postponed during the depression years had been fully satisfied. Employment had risen, and relief rolls had declined. The Supreme Court bill had been defeated, and Congress had adjourned toward the end of August after passing little legislation of a drastic nature during the year. Since the middle of August the stock market had been weak, but this was regarded in many quarters as a healthy reaction after a prolonged upward trend.

However, the month of September had not progressed very far when the belief that the summer dulness would be automatically followed by renewed expansion be-

came tinged with misgivings. The security markets continued to decline, and it became apparent from the severity of the successive breaks that the fall in prices constituted something more than a temporary corrective movement. Smaller gains in retail trade were being reported; the number of commercial failures was increasing; progress toward higher levels of construction activity was absent; inactivity in the capital market persisted, and industry was beginning to feel the effects of increased costs of labor and raw materials. Comment began circulating to the effect that perhaps a cyclical readjustment of business was under way.

The belief that the downward reaction of business constituted a temporary readjustment soon gave way to a realization that the development of the early stages of a business recession of indeterminate degree was in progress. The downward movement gained momentum rapidly, and by November the Guaranty Trust Company's index of business activity had fallen from 96.1 for both July and August to the preliminary figure of 81.1.

For most lines of business a satisfactory showing was apparently made for the year 1937 as a whole. But the figures are in many instances misleading in that the severe decline of the last three months is neutralized by the exceptionally good figures of the first three months and the continuing relatively high record maintained during the following six months. In other words the year might be described as a feast-famine year.

AGRICULTURE

Department of Agriculture estimates indicate that most crops will reach about the size forecast earlier in the year. Cash farm income, however, is lower than anticipated owing to price declines both for crops and live stock. Thus for cattle the December 1937 price was $8.60 per 100 lbs. as compared with $10.05 for the same month in 1936; for hogs $7.90 as compared with $9.90; for corn 59¾ cts. compared with 1.10⅜ cts.; and for wheat (No. 2 red Chicago) 97⅞ cts. compared with $1.36. Anticipated cash income in 1937 is placed at $8,500,000,000 as compared with $7,918,000,000 in 1936, said increased income being due primarily to increased income from marketings of wheat, tobacco, and fruits, and to larger governmental payments. Among many lines the Nation was blessed with huge crops. The cotton crop is placed at 18,746,000 bales, an average yield of 264.6 pounds per acre, by far the largest on record. Total income from 78 crops is placed at $3,840,000,000, a gain of 11 per cent over 1936, while income from live stock and products is estimated at $4,280,000,000 as compared with $4,171,000,000 for the previous year. Government payments for the year are expected to total $380,000,000 as against $287,000,000 last year.

MANUFACTURING AND MINING INDUSTRIES

In these industries, where the output of product is more subject to control than in agriculture, the price declines were also considerable. Comparing December, 1937 with the same month of 1936, the following price changes (mostly decreases) may be selected from the many listed in *The Guaranty Survey:* Coal (Pittsburgh district) $2.00 per ton as compared with $1.95; coffee 8½ cts. per lb. as compared with 11⅛ cts.; copper 10.12½ cts. compared with 10.87½ cts.; cotton 8.31 cts. per lb. compared with 12.72 cts.; hides 14½ cts. per lb. compared with 15½ cts.; pig iron $23.50 (per gross ton) compared with $20.00; steel billets (Pittsburgh) $37.00 per gross ton compared with $32.00; lead 5.00 cts. per lb. compared with 5.50 cts.; petroleum (Pennsylvania) $2.20 per bbl. compared with $2.45; rosin $5.35 per 280 lbs. compared with $9.75; rubber $.14⅞ per lb. compared with $.19⅞; silk $1.56½ per lb. compared with $1.93; sugar 3.20 cts. per lb. compared with 3.78 cts.; tin 43.25 cts. per lb. compared with 52.75 cts.; wool $.75 per lb. com-

pared with $1.02; zinc 5.00 cts. per lb. compared with 5.35 cts.

NEW CAPITAL FLOTATIONS

Such new financing continued during 1937 in a state of comparative stagnation, just as was the case during 1936 and 1935. For December, 1937 new issues totalled only $164,000,000 as compared with $135,000,000 for November, $196,000,000 for October, $224,000,000 for September, $187,000,000 for August, $340,000,000 for July, and $560,000,000 for June. The last six months of the year thus show an extraordinary decline. For the year as a whole, 1937 represents a total of domestic corporate issues, bonds, notes, and common and preferred stocks, of only $2,337,000,000 as contrasted with $4,579,000,000 during 1936, $2,267,000,000 during 1935, and $489,000,000 and $379,000,000 during 1934 and 1933.

CORPORATE FINANCING

(Source of Data — "Survey of Current Business")
(Source of Data — Babson's Statistical Service)

	1936		1937	
	Capital	Refunding	Capital	Refunding
January	$ 72,935,000	$200,973,000	$102,456,000	$203,517,000
February	13,473,000	181,141,000	129,842,000	224,521,000
March	58,816,000	536,037,000	137,589,000	181,055,000
April	127,879,000	559,872,000	85,227,000	86,535,000
May	37,608,000	267,385,000	78,153,000	87,210,000
June	151,874,000	375,756,000	268,946,000	149,341,000
July	69,809,000	224,583,000	81,951,000	56,781,000
August	170,799,000	61,639,000	49,398,000	56,136,000
September	74,590,000	175,460,000	112,182,000	39,386,000
October	94,885,000	271,517,000	59,447,000	69,653,000
November	109,077,000	129,927,000		
December	218,206,000	407,707,000		

YEARLY TOTALS

	Capital	Refunding
1937	$1,105,191,000*	$1,154,135,000*
1936	1,214,951,000	3,391,997,000
1935	403,569,958	1,863,858,807
1934	178,257,949	312,836,500
1933	160,717,178	220,866,478
1932	325,361,625	318,533,720
1931	1,763,448,723	825,516,700
1930	4,944,403,166	528,875,877
1929	8,639,439,560	1,386,921,569
1928	6,079,602,416	1,738,274,615
1927	5,391,008,544	1,928,187,260
1926	4,357,002,720	942,550,970
1925	4,100,725,167	637,384,524
1924	3,322,295,764	516,275,300
1923	2,712,996,155	530,345,942

* For ten months.

BANK CLEARINGS

During 1937 such clearings also showed a substantial decline towards the end of the year, the grand total for the week ended Dec. 25 for 112 cities being $5,308,446,750 as compared with $6,477,000,000 for 1936, $5,056,000,000 for 1935, and $4,333,000,000 for 1934. As usual New York City represents the larger share of the clearings, the total in 1937 being $3,097,000,000 as compared with $2,211,000,000 for clearings outside of New York. For the week ended Dec. 25, 1937, the table next page shows the large declines for nearly all Federal Reserve centers in comparison with the corresponding week of 1936.

For 1937 as a whole, however, total clearings ($333,000,000,000) show an increase of 1.5 per cent over 1936 ($328,000,000,000). Outside of New York City the annual clearings show an increase of 8.7 per cent, *i.e.*, $146,000,000,000, as compared with $135,000,000,000 for 1937. In other words the decline in the later months was counterbalanced by the favorable increase of the earlier months.

Federal Reserve District	1937 (millions)	1936 (millions)	Increase or Decrease (%)
First — Boston (12 cities)	$ 209	$ 278	−24.8
Second — New York (13 cities)	3,198	4,044	−20.9
Third — Philadelphia (10 cities)	340	384	−11.4
Fourth — Cleveland (5 cities)	258	333	−22.6
Fifth — Richmond (6 cities)	119	98	+21.2
Sixth — Atlanta (10 cities)	146	142	+ 2.8
Seventh — Chicago (18 cities)	407	503	−19.1
Eighth — St. Louis (4 cities)	125	147	−14.9
Ninth — Minneapolis (7 cities)	89	98	− 9.7
Tenth — Kansas City (10 cities)	121	135	−10.7
Eleventh — Dallas (6 cities)	64	62	+ 3.4
Twelfth — San Francisco (11 cities)	231	252	− 8.2
Grand Total	$5,308	$6,477	−18.1

THE SECURITY MARKETS

Probably the brightest feature in the 1935–36 record was the continuous bull security market, all major groups of stocks participating in the rise. This forward movement continued into 1937, until March, when 20 representative railroad stocks reached a high monthly average of 64.8 (Standard Statistics Company index), 50 industrial stocks 174.6, and 20 utility stocks 100.9 in January. Thereafter a decline commenced, first moderately, later reaching the proportions of a collapse during September, October and November. By November the monthly averages for these three groups of shares stood respectively at 33.1, 107.8, and 63.3. Within about three months the railroad stock average dropped by 40½ per cent, the industrial stock average by 34 per cent, and the utility average by 23 per cent. The composite bond average also declined during 1937 from a high of 100.7 (Standard Statistics Company index) in January to a low of 81.1 in November. Stock sales on the New York Stock Exchange totalled only 409,468,885 shares as compared with 496,000,000 during 1936. As has so frequently been pointed out in previous issues, the stock market is a discounter of future business conditions, and from that standpoint the collapse of security prices during the last quarter of 1937 was merely a forerunner of a substantial recession in business.

THE RAILROAD INDUSTRY

Issues of The American Year Book in recent years have explained the unfortunate position of the railroads, pointing out that this important industry, out of all of the Nation's pivotal businesses, probably suffered as great reverses as any. The Association of American Railroads reported at the close of the year that loadings for revenue freight for the 52 weeks ended Dec. 25, 1937 totalled 37,992,928 cars, an increase of 1,930,253 cars, or 5.4 per cent, as compared with 1936. Here again the favorable showing was during the first half of the year, and an unfavorable decline during the last half, and particularly the last quarter. The week ended Dec. 25, showed a total of only 460,367 cars, a drop of 142,925 or 23.7 per cent from the previous week, and of 18.1 per cent from the total for the last week of 1936. Preliminary reports from railroads representing 82.6 per cent of total operating revenues of Class I carriers shows that those roads had during November, 1937 estimated operating revenues 11.7 per cent below those for November, 1936, and 19.9 per cent below those for the corresponding period in 1930.

EXPORTS AND IMPORTS

This branch of economic activity did exceedingly well throughout the year, exports totalling $3,026,872,000 for the first 11 months of the year, and imports $2,875,202,000. The two

items showed gains of nearly $801,000,000 and $698,000,000 over 1936. November exports (the last available) totalled $314,000,000 as compared with $223,000,000 for January, and imports for the two corresponding months were respectively $223,000,000 and $240,000,000. The year's exports (first 11 months) of $3,026,000,000 compared with $2,226,000,000 for 1936, $2,059,000,000 for 1935, $1,962,000,000 for 1934, $1,482,000,000 for 1933, and $1,479,000,000 for 1932. Imports of $2,875,000,000 for 1937 (11 months) compared with $2,177,000,000 for the corresponding period of 1936, $1,861,000,000 for 1935, $1,523,000,000 for 1934, $1,316,000,000 for 1933, and $1,226,000,000 for 1932. According to Government reports the increase in the exports of 1937 over the value of the first 11 months of 1936, was 36 per cent, while that in imports over the corresponding period of 1936 was 43 per cent; the respective increase in quantity was approximately 27 per cent and 17 per cent.

AUTOMOBILE SALES

Factory sales of automobiles by American manufacturing concerns during 1937 totalled 5,002,188 passenger cars and trucks. In other words, 1937 represented the second time in history when the 5,000,000 mark was passed. The total for 1937 exceeded the 4,716,724 units of 1936 by 8 per cent. Only in 1929 was the 1937 total exceeded, the production of that year amounting to 5,621,715 units. But here again, although 1937 as a whole was favorable, a severe slump occurred during the later months of the year. During December factory shipments aggregated only 332,550 units, a decline of 12 per cent in comparison with the 376,637 units in November, and a drop of 36 per cent as compared with the 518,958 units for December, 1936.

IRON AND STEEL OPERATIONS

For the iron and steel business, 1937 was an unusual feast-and-famine year. According to the American Iron and Steel Institute, December ingot production was the lowest for 39 months. Yet the total of ingot production of only 1,472,241 gross tons during December was sufficient to bring the 1937 total to 49,507,766 tons, the third greatest annual tonnage in our history. This total compares with 46,807,780 tons for 1936, and was exceeded only by the 49,865,185 tons of 1928 and the all-time record production of 54,312,279 tons in 1929. The extent of the slump during the latter part of the year is indicated by the fact that December production was equal only to 25.36 of capacity, while the entire year's output measured up to 72.39 per cent. The progressive decline in steel output is indicated by the following monthly production: 5,216,243 gross tons for March, 4,183,762 tons for June, 3,392,691 for October, 2,153,781 for November, and only 1,472,241 for December.

BUILDING CONSTRUCTION

Using the figures of F. W. Dodge Corporation for 37 eastern States, contracts for new building awards for October 1937 totalled $202,100,000, while the total for the corresponding month of 1936 was $225,000,000. For the first 10 months of 1937 total awards amounted to about $2,509,100,000 as compared (for similar period) with approximately $2,400,000,000 for 1936, $1,400,000,000 for 1935, $1,300,000,000 for 1934, and $800,000,000 for 1933, the lowest point of the depression for the building industry. The high point of 1937 was reached in July, when awards for the month amounted to $321,600,000. The extent of the decline in the later months of the year is indicated by the November awards of only $198,500,000. Building activity has lagged far behind most other commercial and industrial pursuits. In comparison with the $5,000,000,000 awards for the first 10 months of 1929, it is clear that this particular activity has not yet really emerged from depression conditions. For 1,502 cities, with a population of 2,500 or over, the total value of building permits issued during November, as reported by the Bureau of Labor Statistics, was 15 per cent lower than during the preceding month, and seven per cent less than in the cor-

responding month of 1936, said decline being attributed almost wholly to a decrease in the value of new residential construction.

COMMERCIAL FAILURES

As explained in 1936, commercial failures for 1936 reached a new low for the depression, Dun and Bradstreet figures showing only 688 failures in November, the smallest number in any November since 1919. For the first 11 months of 1936 the total was only 8,946, as compared with 10,939 in the same period of 1935. During 1937 the record remained an excellent one, the total number of business failures reported by Dun and Bradstreet for the first 10 months (latest available) amounting to only 7,299, and the liabilities of failures being placed at only $92,225,000. With the severe decline in business during the last three months of 1937, however, business failures also began to give evidence of some increase, the number of failures for October (latest available) rising to 768 as compared with 564 for the preceding month of September. The year 1937, as also 1936 and 1935, again clearly evidences the fact that the heavy liquidation of the depression has run its course, and that there is little to fear by way of a bankruptcy situation for a long time to come.

INDUSTRIAL AND RAILROAD DIVIDENDS

For the first 10 months of 1937 dividend declarations of industrial and miscellaneous American corporations (*The New York Times*) totalled $2,985,186,000 for the first 10 months of the year, and for American railroads $162,729,000. These totals compare with the poorest record of the depression, namely 1933, when the corresponding figures stood respectively at $2.007,175,675 and $170,738,433. The 10 months' record of industrial dividends for 1937 compares with $2,414.000,000 for the whole of 1932, $3,535,000,000 for 1931, $4,088,000,000 for 1930, and $3,700,000,000 for 1929. For railroads the ten months' record of $163,000,000 for 1937, compares with the yearly total of $184,000,000 for 1932, $419,000,000 for 1931, $550,000,000 for 1930, and $552,000,000 for 1929. It is thus seen that industrial rewards to stockholders are still far from the payments prevailing at the beginning of the depression in 1930, while the return to stockholders in American railroads is still pitifully small.

GENERAL BUSINESS INDEXES

Using the figures of the Board of Governors of the Federal Reserve System, issued Dec. 23, it would appear that November, 1937 showed a substantial decline along nearly all important lines as compared with the corresponding month of 1936, although certain exceptions should be noted like plate glass, wheat flour, sugar meltings, newsprint production, petroleum refining, crude petroleum production, tobacco products, and zinc. (See table next page.)

COMMODITY INDEX NUMBERS AND LABOR CONDITIONS

Using the Bradstreet index for wholesale prices, 1937 witnessed a substantial decline from 11.82 in March, the high mark since 1929, to 9.35 in December, a decline of nearly 21 per cent. The average for the year as a whole (11.06) compares with 10.09 for 1936, 9.92 for 1935, 9.22 for 1934, and 12.66 for 1929. But the annual figure for 1937 is again misleading, the low December figure being counterbalanced by the relatively high monthly averages of the first nine months. Yet the December index of 9.35 still compares very favorably with the low of 6.72 for December of 1932. Between January and October the British Board of Trade index also rose from 102.9 to 111.5, and thereafter declined to 110.6 in October (latest available).

With respect to the U. S. Department of Labor index number, a slightly rising tendency during the early months of 1937 was followed by a declining tendency during the later months. Beginning with 85.9 for January, this number rose to 88 for April, and thereafter again declined

INDUSTRIAL PRODUCTION

(1923–1925 average = 100)

Manufactures	Adjusted for Seasonal Variation			Without Seasonal Adjustment		
	Nov. 1937	Oct. 1937	Nov. 1936	Nov. 1937	Oct. 1937	Nov. 1936
Durable Goods						
Iron and steel	68	100	137	63	98	127
Automobiles	92	142	105	111	100	127
Locomotives	—	34	11	—	34	12
Plate glass	151	179	164	151	179	164
Tin deliveries	—	—	—	115	141	97
Beehive coke	14	20	20	15	20	21
Non-Durable Goods						
Textiles	80	91	121	83	93	125
Slaughtering and meat packing	86	89	109	95	89	121
Wheat flour	86	86	83	93	96	90
Sugar meltings	101	73	83	79	69	65
Newsprint production	64	63	67	63	63	66
Leather and products	82	88	116	79	97	112
Petroleum refining	—	217	188	—	218	189
Lubricating oil	—	—	—	—	134	114
Tobacco products	155	155	150	158	167	153
Minerals						
Bituminous coal	75	83	95	85	92	106
Anthracite	65	55	69	67	70	71
Petroleum, crude	175	176	152	174	177	150
Iron ore	40	91	110	34	156	93
Zinc	108	115	100	108	112	100
Silver	—	91	99	—	90	106

gradually to 81.2 at the close of the year. The December figure was the lowest point of the year, and was 8 per cent below the high point of 1937 and 3.4 per cent below the index at the close of 1936. In tabular form the index numbers of the Bureau for the main group of commodities, at the close of the year, compared with former years as follows:

INDEX NUMBERS OF COMMODITY PRICES

(Source of U. S. Dept. of Labor — "Survey of Current Business")
(Source of Bradstreet — Standard Trade & Securities Statistical Bulletin)
(Source of U. K. Board of Trade — Barclay's Bank Ltd. Monthly Review)

	U. S. Dept. of Labor		Bradstreet		U. K. Board of Trade	
	1936	1937	1936	1937	1936	1937
January	80.6	85.9	10.36	11.14	91.8	102.9
February	80.6	86.3	10.02	11.23	91.7	103.9
March	79.6	87.8	9.92	11.35	91.7	107.3
April	79.7	88.0	9.85	11.82	91.9	109.0
May	78.6	87.4	9.82	11.52	91.9	110.7
June	79.2	87.2	9.74	11.34	92.6	110.6
July	80.5	87.9	9.85	11.27	93.6	111.5
August	81.6	87.5	10.14	11.19	95.2	111.4
September	81.6	87.4	10.19	10.96	96.1	111.2
October	81.5	85.4	10.27	10.85	97.6	110.6
November	82.4		10.22	10.35	98.3	
December	84.2		10.79	9.3563	100.8	

YEARLY AVERAGE
(Bradstreet)

1904	7.92
1905	8.09
1906	8.41
1907	8.90
1908	8.00
1909	8.51
1910	8.98
1911	8.7129
1912	9.1867
1913	9.2115
1914	8.9985
1915	9.8531
1916	11.8236
1917	15.6385
1918	18.7117
1919	18.6642
1920	18.8096
1921	11.3695
1922	12.1186
1923	13.4028
1924	12.8672
1925	13.9445
1926	13.0207
1927	12.7788
1928	13.2824
1929	12.6685
1930	10.7450
1931	8.7596
1932	7.0956
1933	7.86
1934	9.22
1935	9.92
1936	10.0989
1937	11.0648

With respect to labor conditions, using November as the basis, 1937 showed a moderate decline as compared with the same month of 1936. Referring to the Dec. 23 report of the Board of Governors of the Federal Reserve system, the showing is as follows for leading types of industries:

FACTORY EMPLOYMENT AND PAYROLLS

(1923-1925 average = 100)

	Employment						Payrolls		
	Adjusted for Seasonal Variation			Without Seasonal Adjustment			Without Seasonal Adjustment		
	Nov. 1927	Oct. 1927	Nov. 1926	Nov. 1927	Oct. 1927	Nov. 1926	Nov. 1927	Oct. 1927	Nov. 1936
Durable Goods									
Iron and steel	98.6	105.4	99.6	98.2	105.8	99.3	85.6	106.8	95.8
Machinery	120.8	128.0	110.4	121.4	128.9	111.4	120.9	134.2	105.6
Transportation equipment	118.4	126.3	112.3	121.2	122.7	115.0	118.8	129.9	113.4
Railroad repair shops	57.3	58.7	60.6	57.3	59.0	60.6	62.9	64.9	65.2
Nonferrous metals	105.6	109.4	106.7	108.9	112.7	110.0	100.5	109.9	102.0
Lumber & products	61.8	66.4	66.2	63.2	69.4	67.8	54.9	65.3	60.8
Stone, clay & glass	67.2	69.4	66.3	68.2	71.4	67.3	63.7	69.6	61.1
Non-durable Goods									
Textiles & products	91.5	96.4	104.4	91.9	98.8	104.8	71.3	84.2	87.2
Leather products	86.1	88.8	94.9	80.7	89.5	89.0	54.5	66.3	67.3
Food products	113.8	113.8	113.4	125.0	114.1	115.7	115.7	125.0	108.3
Tobacco products	59.7	59.3	62.4	63.0	62.6	65.9	57.2	57.9	54.8
Paper & printing	105.0	107.0	103.6	106.4	107.9	105.0	101.6	105.1	98.6
Chemicals & petroleum products	120.6	123.7	118.1	122.4	126.5	119.7	132.0	137.5	114.7
Rubber products	91.6	98.1	99.4	92.1	97.7	100.0	83.3	94.3	101.2

Rapidity of the industrial decline, following September, 1937, is indicated by data made available recently by the Bureau of Labor Statistics for approximately 125,000 important establishments. The estimate of the Bureau shows that in these industries nearly 570,000 fewer workers were employed in November than in October, and weekly wage payments were smaller by $25,000,000.

BUREAU OF LABOR STATISTICS PRICE INDEX FOR MAIN GROUPS OF COMMODITIES

(1926 = 100)

Commodity Groups	Dec. 25, 1937	Dec. 26, 1936	Dec. 28, 1935	Dec. 29, 1934	Dec. 30, 1933
All commodities	81.2	84.1	80.6	77.1	70.8
Farm products	72.9	88.4	78.4	72.6	56.0
Foods	78.9	85.7	85.3	76.3	62.5
Hides and leather products	98.4	101.1	96.4	86.6	89.6
Textile products	69.4	76.1	72.8	69.7	76.0
Fuel and lighting materials	78.6	77.5	75.6	74.7	74.5
Metals and metal products	96.2	89.1	85.9	85.5	83.3
Building materials	92.5	89.7	85.1	84.9	85.4
Chemicals and drugs	79.2	86.1	80.0	78.3	73.3
Housefurnishing goods	91.4	84.3	82.2	82.5	81.9
Miscellaneous	74.9	74.5	67.5	71.1	65.6
Raw materials	75.3	85.5			
Semi-manufactured articles	77.4	83.1			
Finished products	85.0	83.9			
All commodities other than farm products	83.1	83.1	81.1	78.0	74.0
All commodities other than farm products and foods	83.6	82.4	78.8	78.1	77.6

THE SECURITY AND MONEY MARKETS

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GENERAL CONDITIONS IN THE STOCK MARKET

As explained in the 1936 issue of The American Year Book, the security market experienced a broad upward movement during 1935 and 1936. In fact, by November 1936 stocks pushed through the 1927 average level and the market advanced to the highest point since 1931, namely to 166.2 for industrial stocks (Standards Statistics Company Index), 62.2 for railroad stocks, 98.9 for public utility stocks, and 218.7 for copper and brass stocks. This forward movement continued into 1937 until February and March, when the aforementioned stock indices stood, respectively, at 174.6, 64.8, 100.9 and 254. Bond prices also showed marked improvement during 1935 and 1936, the movement continuing until January, 1937 when the composite bond prices, (Standard Statistics Company Index) reached a high of 100.7. Volume of stock transactions on the New York Stock Exchange also increased materially, rising from 323,000,000 shares in 1934 to 381,000,000 in 1935, and 496,000,000 in 1936.

During the first quarter of 1937 nothing appeared with respect to underlying conditions that would seem to prevent a further substantial bull market. In fact market sentiment was extremely optimistic, and market actions seemed to warrant the belief that the nation was emerging definitely from the 1930–36 depression. As was pointed out last year: "Among the factors that were directly or indirectly responsible for the rise may be mentioned the prospect of greatly increased production in order to make up for deficiencies accumulated during the depression years, the large volume of lendable funds, exceedingly

low money rates, the great demand of foreign buyers for American securities, the gradual opening of foreign markets, the better balance obtained between agriculture and industry, the more hopeful outlook relative to the balancing of the Federal budget, the tri-partite agreement among the United States, England and France for the stabilization of their currencies, and the effect of the tax on undistributed earnings upon the dividend policies of corporations. During 1936, according to *The New York Times* report, cash dividend declarations amounted to $4,122,725,360 compared with $2,942,672,386 in 1935, and $2,686,711.575 in 1934.

Despite the aforementioned favorable situation, the security market commenced to waver near the close of March, 1937. The following five months showed considerable resistance to the decline, as is indicated by the fact that even for August the industrial stock index of the Standard Statistics Service still stood at 163.9, the railroad index at 53.3, the public utilities index at 80.7, and the copper and brass index at 232.8. During the next three months, however, following August, the market experienced a decline which can only be described as a collapse. The decline in prices during September, October, and November was not only drastic but also general in its application to all groups of stocks. In fact there are few instances on record where a larger percentage decline has occurred within so short a period of time as three months. Following November, the market acted as though the liquidation in stocks was substantially completed, the price level having been fairly maintained at bottom figures to the end of the year.

To many commentators the unfortunate decline of 1937 seems mysterious, especially in view of the excellent fundamental factors already referred to. Yet adverse news piled up so plentifully during the last three quarters of 1937 as to undermine the confidence of the investment and speculative community. Labor unrest of serious proportions confronted nearly all of the nation's basic industries, and resulted in widespread disorganization in production as well as huge financial loss to all concerned. The tax on industrial profits and capital gains was weighing increasingly on corporations and greatly curtailed expansion of industrial facilities. Actual war as well as the prospects of war filled the newspapers day by day with respect to nearly all the important nations of Europe and Asia. At home it became more and more apparent that the Government could not balance the budget, and that there was also every likelihood of a further increase in taxes. There was also a governmental tendency to compete with private industry, as well as a marked governmental disposition to war upon "big business." Numerous political measures were also threatened, which involved the danger of large potential powers over private business to such an extent as to cause a widespread "fear psychology," with its severe reaction upon the security market.

STOCK PRICES

Industrials.—The extent of the decline during 1937 is shown by the monthly averages of the Standard Statistics Company for various groups of stocks. Fifty representative industrial stocks declined from 174.6 in March to 163.9 in August, and thereafter abruptly to 107.8 in November. In other words, a decline of 34 per cent occurred within the three months of September, October and November. The November average of 107.8 compares with 168 for January of 1937, 129.1 for January of 1936, and 53.5 for the yearly average of 1932, the bottom year of the 1930–36 depression. Following 1932 the industrial stock average experienced a rise of nearly 226 per cent by March of 1937. Even after the 1937 decline, the November average remains about twice as high as the 1932 price level. But it should again be remembered, as was pointed out in 1936, that "the present price level is in dollars representing a devaluation of slightly over 40 per cent as compared with the dollar before its devaluation. In other words, a proper interpretation

of the rise since 1932, the low during the depression, must not leave out of consideration the fact that the present quotations reflect a larger number of smaller dollars to counteract the devaluation which occurred in the precious metal of our medium of exchange since the hectic days of 1932." It should also be pointed out that during 1929 this industrial list reached the highest monthly level during September, namely 245.9. Comparing this 1929 September average with 37.9, the lowest monthly average reached in June, 1932, it appears that these industrial shares declined within the three years under consideration by nearly 85 per cent. The November, 1937 average of 107.8, compared with the June 1932 average of 37.9, still shows an appreciation of about 184 per cent.

Rails.—With respect to 20 representative railroad stocks, the monthly average of the Standard Statistics Company declined from 64.8 in March, 1937 to 55.4 in July. Thereafter the average fell rapidly from 55.4 in July to 33.1 for November, or nearly 40½ per cent. The November average (33.1) compares with 64.8 for March, the high of the year, with 47 for January, 1936, and with yearly averages of 36 for 1935, 42.9 for 1934, 39 for 1933, 26.8 for 1932, and 141 for 1929. During 1929 it should be noted that these railroad shares reached the highest monthly level during September, namely 161.2. Comparing this September, 1929 average with 15, the lowest average reached in June, 1932, it appears that these railroad shares declined within the three years under consideration by over 90 per cent. The November, 1937 average of 33.1, compared with the June, 1932 average of 15, shows an appreciation of 305 per cent. Yet this November, 1937 average, compared with 161.2, the September, 1929 high, still shows a depreciation of nearly 80 per cent.

Utilities.—A smaller degree of depreciation during 1937 is shown in the public utility group. According to the Standard Statistics average of 20 utilities, the monthly average declined from 100.9 in January, to 74.4 in June, then rose to 80.7 in August. Thereafter this utility average slumped from the August figure of 80.7 to 63.3 for November, or by about 23 per cent. The November, 1937 average compares with 100.9 for January, the high of the year, with 88.4 for January of 1936, and with yearly averages of 62.8 for 1935, 65.5 for 1934, 81.8 for 1933, 88.7 for 1932, and 246 for 1929. During 1929 it should be noted that utility stocks also reached the highest monthly level during September, namely 340.6. Comparing this September, 1929 high with the March, 1935 low of 42.9, it appears that these shares declined within the depression years by over 87 per cent. The November, 1937 average of 63.3, compared with the March, 1935 average of 42.9, still shows an appreciation of 45 per cent. Yet this November, 1937 average compared with 340.6, the September, 1929 high, still shows a depreciation of over 81 per cent.

Coppers.—Attention may also be called to a representative list of seven copper and brass stocks whose average price underwent a decline during the period of August to November, 1937 from 232.8 to 115.4, or approximately 50 per cent. Here the November, 1937 average compares with 254 for March, and with 113.4 for January of 1936.

MARKET VALUE OF SHARES

According to the New York Stock Exchange *Bulletin* (December, 1937) the total market value of listed stocks on the New York Stock Exchange stood at $59,878,127,946 on Jan. 1, 1937. This aggregate market value rose to $62,617,741,160 for March, the highest monthly total for the year. For August 1937 the total market value had declined to $59,393,594,170. Thereafter the depreciation was very rapid, and reached the lowest total of the year in December, namely $40,716,032,190. In other words, from March to December, 1937 listed shares on the New York Stock Exchange shrank in value by almost $22,000,000,000.

The average monthly stock price index, as published by the New York Stock Exchange *Bulletin,* ranged

from 55.99 in January, 1937, to 56.96 in April, to 52.03 in August, and to 37.80 in December. The December average of 37.80 compares with the following December averages for preceding years: 56.01 for December, 1936, 45.85 for 1935, 35.59 for 1934, 32.78 for 1933, 25.61 for 1932, 34.24 for 1931, 55.53 for 1930, 68.44 for 1929, and 97.80 for 1928.

SECURITY MARKET PRICES

	Railroads (20 stocks)		Industrials (50 stocks)		Public Utilities (20 stocks)		Copper and Brass (7 stocks)	
	1936	1937	1936	1937	1936	1937	1936	1937
January	47.0	*58.8	129.1	*168.0	88.4	*100.9	113.4	227.4
February	52.3	*60.8	136.6	*174.5	91.1	* 97.2	132.8	239.1
March	51.3	*64.8	140.7	*174.6	90.1	* 91.8	144.6	254.0
April	50.6	*62.1	141.5	*163.9	88.6	* 85.5	153.1	230.6
May	47.7	*60.6	133.9	*156.8	83.9	* 79.4	136.7	204.8
June	50.2	56.0	138.8	152.1	90.3	74.4	142.1	207.5
July	54.6	*55.4	146.0	*161.2	97.8	* 81.7	148.1	218.9
August	57.0	*53.3	149.0	*163.9	98.5	* 80.7	163.4	232.8
September	58.6	*44.1	151.1	*140.7	97.3	* 70.8	168.8	196.1
October	62.2	*36.7	159.8	*119.9	98.9	* 62.6	183.1	139.2
November	60.8	*33.1	166.2	*107.8	96.6	* 63.3	218.7	115.4
December	*57.3		*163.4		*96.6		215.6	

*An average for the month based on daily closing prices. (*The New York Times*)
(Source of data — "Standard Trade and Securities, Statistical Bulletin"
Standard Statistics Company, Inc.)

COMPOSITE BONDS

(60 bonds)

	1936		1937	
	High	Low	High	Low
Jan.	96.4	93.3	100.7	100.0
Feb.	97.9	96.3	100.4	99.6
March	97.4	95.8	99.8	97.1
April	96.5	94.5	97.2	95.9
May	95.9	94.7	96.9	95.7
June	96.6	95.7	95.8	93.4
July	97.7	96.4	95.6	94.2
August	97.9	97.4	95.3	94.0
Sept.	99.2	97.9	93.7	88.8
Oct.	100.0	99.1	89.9	82.3
Nov.	100.1	99.2	85.4	81.1
Dec.	100.2	99.4		

BOND VALUES

All American bonds listed on the New York Stock Exchange showed a total market value of $41,612,639,596 on Jan. 1, 1937. This value declined almost consistently throughout the year, as far as monthly averages are concerned, until a value of $39,088,117,498 was reached on Dec. 1. In other words, during the first 11 months of 1937 American bonds listed on the New York Stock Exchange experienced a shrinkage of over $2,500,000,000. At the beginning of the year the average price for 1,092 issues of American bonds stood at 100.76, which compares with 92.36 for Dec. 1, 1937, and with the following for December of the previous years: 100.55 for 1936, 93.69 for 1935, 91.68 for 1934, 82.98 for 1933, 81.36 for 1932, 84.13 for 1931, 96.51 for 1930, 96.80 for 1929, and 98.69 for 1928.

VOLUME OF STOCK TRANSACTIONS

Stock transactions on the New York Stock Exchange during 1937 decreased considerably from the volume recorded for 1936. Despite the severe shrinkage in the price level, there was a surprising dullness in market activity. Barely did transactions attain the 3,000,000 daily share level. The monthly record of shares reached its highest in January when total transactions amounted to 58,671,416 shares. The months of May to August inclusive were exceedingly dull with monthly transactions ranging 16,000,000 and 21,000,000 shares. Thereafter

an increase occurred during the months of September, October and November, accompanying the drastic decline in prices, and yet September and November represented sales of only 29,000,000 and 33,000,000 shares respectively, while October only slightly exceeded 51,000,000 shares.

Shares sold on the New York Stock Exchange during all of 1937 totalled 409,468,855 shares (as reported by *The New York Times*) as compared with 496,063,099 shares for 1936, 381,666,197 shares for 1935, 324,000,000 for 1934, 655,000,000 for 1933, 425,000,000 for 1932, 577,000,000 for 1931, 811,000,000 for 1930, and 1,125,000,000 for 1929, the highest figure on record. As explained in previous years, the huge rise in the number of shares dealt in during 1929 and 1930 is partly attributable to the substantial increase in the number of shares listed on the New York Stock Exchange, such increase being indicated by the fact that whereas the number of listed shares totalled 735,000,000 in 1928, the total increased in 1929, 1930, and 1931 respectively to 1,114,000,000, 1,297,000,000, and 1,319,000,000. The volume of transactions during 1933 and thereafter, however, is not influenced by this factor. On the New York Curb Market sales also showed a similar tendency to decline, the total sales standing at 104,178,804 shares during 1937 (*The New York Times*) as compared with 134,843,049 for 1936, 75,850,188 for 1935, 55,888,426 for 1934, 100,653,001 for 1933, and 56,997,581 for 1932. The 1937 total compares with 110,000,000 shares for 1931, 220,000,000 for 1930, and 474,000,000 for 1929.

VOLUME OF BOND TRANSACTIONS

Bond sales on the New York Stock Exchange during 1937 totalled $2,792,531,000 (*The New York Times* report) as compared with $3,575,453,110 for 1936, $3,347,855,300 for 1935, $3,729,460,500 for 1934, $3,366,402,950 for 1933, $2,972,000,000 for 1932, $3,075,000,000 for 1931, $2,779,000,000 for 1930, and $3,020,000,000 for 1929. Just as in the share market, bonds experienced a marked decline in price during 1937. Using the Standard Statistics average for 60 bonds, the monthly average for 1937 declined from 100 in January to 81.1 in November. The decline was moderate during the first eight months of the year, namely, a shrinkage from 100 in January to 94 in August. During the following three months, however, the decline was much more drastic, as was also the case with stocks, namely, from 94 in August to 81.1 in November, or shrinkage of approximately $130 per $1,000 bond.

SHARES TRADED ON THE NEW YORK STOCK EXCHANGE

(New York Stock Exchange *Bulletin*)

	1936	1937
Jan.	67,201,745	58,671,416
Feb.	60,884,392	50,248,010
March	51,016,548	50,346,280
April	39,609,538	34,606,839
May	20,613,670	18,549,189
June	21,428,647	16,449,193
July	34,793,159	20,722,285
Aug.	26,563,970	17,212,553
Sept.	30,872,559	33,854,188
Oct.	43,995,282	51,127,611
Nov.	50,467,182	29,254,626
Dec.	48,600,177	

YEARLY TOTALS

	Shares of Stock
1920	226,640,400
1921	172,712,716
1922	258,652,519
1923	236,115,040
1924	281,991,597
1925	454,404,733
1926	450,845,255
1927	576,563,218
1928	919,661,825
1929	1,124,991,490
1930	810,038,161
1931	576,921,426
1932	425,235,829
1933	654,874,210
1934	323,871,840
1935	381,666,197
1936	496,063,099
1937	409,468,885

THE MONEY MARKET

With respect to both time and call loan rates, the 1937 tendency continued much as it was during 1936, 1935, 1934, and 1933. The year 1937 clearly indicated a continuing plethora of idle funds. Just as was explained in

previous years, New York time and call loans were quoted at only about one per cent, thus showing the unusual absence of demand for funds for commercial and speculative purposes.

Beginning with a January average of ¾ of 1 per cent for four to six months commercial paper, and 1 per cent for call loans in New York, the average monthly rates during 1937 remained extremely low, month after month, throughout the year. For prime commercial paper the rate in New York averaged ¾ of 1 per cent for January and February, and .82 per cent for March. Thereafter, from April to November, the rate stood at 1 per cent. For call loans in New York the monthly average remained at 1 per cent for every month in the year.

According to the New York Stock Exchange *Bulletin* (December, 1937) the borrowings of New York Stock Exchange members on security collateral showed a very substantial decrease as compared with 1936. Thus time loans actually decreased from $282,985,819 to $189,219,404 between Jan. 1 and Dec. 1, 1937. During the same period call loans decreased from $768,439,342 to $498,567,176. Combining the two types of loans, total borrowings showed a decrease from $1,051,425,161 on Jan. 1 to $687,786,580 on Dec. 1. This combined total compares with corresponding figures prevailing on Dec. 1 of $984,004,702 for 1936, $846,113,137 for 1935, $831,000,000 for 1934, $789,000,000 for 1933, $336,000,000 for 1932, $730,000,000 for 1931 $2,162,000,000 for 1930, $4,017,000,000 for 1929, and $6,392,000,000 for 1928. As explained last year: "No doubt, owing to the Securities and Exchange Act, many purchasers of stock have done their financing directly through the banks, instead of with brokers as formerly. Yet the status of brokers' loans remains perplexing in view of the extraordinarily low interest rates prevailing throughout the year." It is clear that in recent years the American stock market has been eminently a cash market and as such is relatively free of speculative inflation through the use of borrowed money.

INTEREST RATES

(Source of Interest Rate Data — Standard Statistics)
(Source of Average Bank Rate — Babson's Statistical Service)
(Source of Gold Movements — Standard Statistics)

	Commercial Paper 4-6 months (choice)		Call Loans—N.Y. Stock Exchange Renewals — average of daily renewal rates		Average Bank Rates — England France and Germany		Gold Movements *(Exports Exceed Imports) (000,000 omitted)	
	1936	1937	1936	1937	1936	1937	1936	1937
January	0.75	0.75	0.75	1.00	3½	3	45.6	121.3
February	0.75	0.75	0.75	1.00	3⅓	3⅓	16.6	120.3
March	0.75	0.82	0.75	1.00	3⅓	3⅓	5.5	154.3
April	0.75	1.00	0.75	1.00	3⅓	3⅓	28.1	215.8
May	0.75	1.00	0.92	1.00	4	3⅓	169.9	155.4
June	0.75	1.00	1.00	1.00	3⅞	3½	277.8	262.0
July	0.75	1.00	1.00	1.00	3	3¾	15.4	175.4
August	0.75	1.00	1.00	1.00	3	3⅓	67.5	104.8
September	0.75	1.00	1.00	1.00	3⅓	3⅓	171.8	145.5
October	0.75	1.00	1.00	1.00	2¾	3⅓	218.8	90.5
November	0.75	1.00	1.00	1.00	2⅔	3 1/16	75.8	
December	0.75		1.00		2⅔	3	57.0	

BANKING AFFAIRS

By Gurden Edwards

Director, Research Council, American Bankers Association

GENERAL

Banks of all classifications in the United States on June 30, 1937 numbered 15,527 institutions with aggregate deposits, exclusive of inter-bank deposits, of $53,287,000,000, as reported in the *Federal Reserve Bulletin*. The total investments of these institutions were $27,182,000,000 on the date given and their loans were $22,514,000,000. As to numbers, these figures showed a decrease of 225 banks from a year earlier, as there were on June 30, 1936 15,752 banks, including both national and state chartered institutions, but there was an increase in the item of deposits. At the earlier date, total deposits were $51,335,000,000, so that the year indicated showed an increase of $1,952,000,000 in this item. In the same period, total investments of banks decreased by $597,000,000 and their loans rose by $1,835,000,000. This latter circumstance reflected a substantial acceleration in loan expansion as compared with the previous year, when the increase was only $407,000,000, and would seem to indicate that less difficulty was experienced by bankers in finding qualified commercial and industrial borrowers willing to venture on an expansion of their activities. The latter part of the year 1937, however, developed a recession that was reflected in bank loans.

CLASSIFICATIONS OF BANKS

Official reports on banks by classes showed that there were on June 30, 1937 5,293 national banks as compared with 5,368 banks of this class a year earlier. The national banks had deposits of $22,926,000,000 exclusive of inter-bank deposits, as compared with $21,986,000,000 a year earlier. Their investments had dropped in the year indicated from $12,459,000,000 to $12,097,000,000 and their loans rose from $7,748,500,000 to $8,796,000,000. The same reports showed that there were in June, 1937 10,234 state banks as compared with 10,384 a year earlier; this figure comprised state commercial banks, trust companies, mutual and stock savings banks and such private and industrial banks as are included in abstracts issued by state banking departments. The deposits of this group of banks totalled on June 30, 1937 $30,361,000,000 as compared with $29,350,000,000 a year earlier. Their investments at the 1937 date were $15,085,000,000 as compared with $15,319,000,000 a year earlier and their loans were $13,718,000,000 as compared with $12,931,000,000 a year earlier.

SUSPENSIONS

The 11 months of 1937 from January through November witnessed 54 suspensions of licensed banks with total deposits of $18,602,000. This compares with 39 suspensions for the same period in 1936 with deposits of $9,967,000. Of the 1937 suspensions 44 were insured by the Federal Deposit Insurance Corporation with deposits of $9,257,000.

BANKING

The American Bankers Association, discussing public and banking questions in its resolutions at its annual convention held in Boston in October, 1937, adopted the following declarations:

"During the past year banking has made steady progress. There has been a notable increase in commercial loans of Federal Reserve member banks and these loans are now over fifty per cent larger in volume than they were at the beginning of 1936.

"Repeating the warning expressed in the resolutions of the American Bankers Association at both its 1935 and 1936 annual conventions, we here emphasize again our conviction that the number of chartered banks should

be limited rigidly to the economic requirements of the nation. Public opinion not only in the nation as a whole but in every state should be kept alert against any tendency toward a return to over-banking through the indiscriminate chartering of new institutions in places which are not large enough to support a bank, or in which there are already ample banking facilities. We believe that full public support should be given the bank supervisory authorities, both state and national, in resisting political or other pressure tending to make for unjustified expansion of the banking facilities under their jurisdictions.

POSTAL SAVINGS

"We approve the extended researches completed during the year by the Association's Committee on Banking Studies with respect to the Postal Savings System, which have laid down an invaluable body of facts for use at the appropriate time in the consideration of such legislation or other measures relative to the system which will be in the public interest, and which will remove unjustified competition with the chartered banks.

GOVERNMENT EXPENDITURES AND BUDGET

"From recent expressions by those high in authority in the national government, we are pleased to note a determination to balance the Federal budget. While recognizing that unusual economic circumstances and necessary efforts to relieve human suffering and deprivation under emergency conditions justified unusual expenditures of public funds, and being aware of the difficulty involved in the effort to balance the budget, nevertheless we believe that a return to a balanced budget should be the prime objective of a sound public fiscal policy.

"From time to time in recent years this Association and its officers have emphasized the importance of this achievement; we now feel the time has come to encourage the steady progress of normal business and industrial enterprise which cannot prosper without the confidence which will be engendered by bringing Federal expenditures through economies in line with income.

TAXATION

"At the recent conference of the governors of the several states, recommendations were made in line with the resolution adopted at our last convention with respect to the overlapping and duplicate taxation of the same objects by local, state and Federal Governments. We again urge that early consideration be given to this important subject by the states working in collaboration with each other and with the Federal government and looking not only toward the elimination of duplicate taxation but as well toward greater certainty in administration and standardization of tax laws. Such action, we believe, would do much to bring about an increase in the normal flow of business activity.

BRANCH BANKING

"Pursuant to the action of the Executive Committee of the State Bank Division, which has been transmitted to us by the President of that Division, Mr. H. M. Chamberlain, with a request for clarification of the position of the American Bankers Association upon questions involved in dual and branch banking, the Resolutions Committee, in response to the request of the State Bank Division, desires to submit the following resolution for adoption by this convention, so that all Divisions, Sections, Committees and Commissions of the Association shall be guided accordingly:

> 'We favor the preservation and continuation of the dual banking system by which banks are free to operate under either state or national charter. We also believe that the system of unit banks has been peculiarly adapted to the highly diversified community life of the United States. However, many of the states now authorize by law the operation of branch banks. We believe that national banks should, as they do now, con-

tinue to enjoy an equality with state banks of branch banking privileges within those states. The Association supports in every respect the autonomy of the laws of the separate states with respect to banking. We reiterate our belief that no class of banks in any state should enjoy a greater right in respect to the establishment of branches than banks chartered under state laws. We are definitely opposed to any proposal or device looking to the establishment of branch banking privileges across state lines, directly or indirectly.'"

RECONSTRUCTION FINANCE CORPORATION AND BANKING

The Reconstruction Finance Corporation, in reporting on its operations through Dec. 31, 1937, stated that since its inception in January, 1932 it had authorized loans to 7,523 banks and trust companies of all classes in the aggregate amount of $2,534,000,000, of which amount $469,703,000 was withdrawn, $59,883,000 remained available to borrowers, and $2,005,000,000 had been disbursed. Of this latter amount, $1,848,000,000, or 92%, had been repaid by the banks. The Corporation also reported that, since it was empowered in March 1933 to make purchases of preferred stock, capital notes and debentures of banks, authorizations had been made for such purchases in the amount of $1,295,000,000. It was also stated that loans had been authorized for distribution to depositors in 2,746 closed banks, aggregating $1,320,000,000 of which $968,000,000 had been disbursed and of this $882,000,000, or over 91%, had been repaid. The foregoing figures consistently demonstrated the steady return of normal conditions in the banking structure.

FEDERAL DEPOSIT INSURANCE CORPORATION

The Federal Deposit Insurance Corporation reported that on June 30, 1937 the Corporation was insuring the deposits (up to $5,000 in a single account) of 13,943 banks. It is estimated that about 99% of the accounts were fully insured under the $5,000 limit.

DETAILED RESOURCES AND LIABILITIES OF INSURED BANKS

The latest available comprehensive official figures for all classes of banks, showing detailed schedules of assets and liabilities, are those given by the Comptroller of the Currency for June 30, 1937. (See table next page.)

SAVINGS IN AMERICAN BANKS

Savings, including time deposits and postal savings deposited in banks in the United States, increased 4.4 per cent in the year closed June 30, 1937, according to reports received by the Savings Division, American Bankers Association. The increase amounted to $1,029,000,000 and the number of savers grew by 1,829,466, or 4.55%. The gain in deposits was general throughout the United States and in only seven States was a per capita loss shown. Total savings in banks aggregated $24,493,000,000. The number of depositors was found to be 44,226,178. The following tabulation gives the savings picture during five years:

SUMMARY OF SAVINGS DEPOSITS AND DEPOSITORS

(Including time certificates and postal savings)
(000 omitted)

Year	Total Savings Deposits	Per Inhab. Savings Deposits	Total Number Savings Depositors
1933...	$21,125,534	$168	39,262,442
1934...	21,752,510	172	39,562,174
1935...	22,652,489	179	41,315,206
1936...	23,463,585	184	42,396,712
1937...	24,492,618	191	44,226,178

THE AMERICAN BANKERS ASSOCIATION

The American Bankers Association, the national organization of banking, including in its membership the great majority of the 15,500 state commercial and national banks, trust companies and savings banks, held its sixty-third annual convention at Boston in October, 1937.

Houston, Tex. was designated for

STATEMENT OF ASSETS AND LIABILITIES OF ALL BANKS, JUNE 30, 1937

(Amounts in thousands of dollars)

	Total all Banks	National Banks	All Banks Other than National
Number of banks	15,580	5,299	10,281
Assets			
Loans on real estate	$ 8,601,412	$ 1,507,270	$ 7,094,142
Other loans, including rediscounts	14,071,081	7,300,512	6,770,569
Overdrafts	12,450	5,113	7,337
U. S. Government securities:			
Direct obligations	14,569,033	6,902,521	7,666,512
Obligations fully guaranteed	2,399,453	1,316,674	1,082,779
State, county, and municipal obligations	3,572,402	1,451,629	2,120,773
Other bonds and securities	6,733,251	2,451,463	4,281,788
Banking house, furniture and fixtures	1,349,208	635,670	713,538
Real estate owned other than banking house	1,261,049	162,409	1,098,640
Cash in vault	958,317	444,598	513,719
Balances with other banks, including reserve with reserve agents	14,670,297	7,933,271	6,737,026
Other assets	743,116	225,941	517,175
Total assets	$68,941,069	$30,337,071	$38,603,998
Liabilities			
Deposits of individuals, partnerships, and corporations:			
Demand	$23,698,641	$12,430,183	$11,268,458
Time	24,571,685	7,469,842	17,101,843
State, county and municipal deposits	3,579,261	2,203,466	1,375,795
U. S. Government and postal savings deposits	806,835	467,873	338,962
Deposits of other banks	6,351,303	3,790,587	2,560,716
Certified and cashiers' checks, cash, letters of credit, etc	814,645	403,962	410,683
Total deposits	$59,822,370	$26,765,913	$33,056,457
Bills payable	$ 52,411	$ 7,968	$ 44,443
Rediscounts	2,567	562	2,005
Agreements to repurchase securities sold	869	676	193
Acceptances executed by or for account of reporting banks	276,780	113,410	163,370
Interest, taxes, and other expenses accrued and unpaid	70,959	51,221	19,738
Dividends declared but not payable and amounts set aside for undeclared dividends and for accrued interest on capital notes and debentures	45,255	27,703	17,552
Other liabilities	433,427	157,453	275,974
Capital notes and debentures	$ 184,964	$.....	$ 184,964
Preferred stock	472,195	298,977	173,218
Common stock	2,593,491	1,283,154	1,310,337
Surplus	3,700,484	1,073,154	2,627,330
Undivided profits—net	787,737	389,233	398,504
Reserves for contingencies	475,268	155,623	319,645
Retirement fund for preferred stock and capital notes and debentures	22,292	12,024	10,268
Total capital account	$8,236,431	$3,212,165	$5,024,266
Total liabilities, including capital account	$68,941,069	$30,337,071	$38,603,998

the holding of the 1938 convention. The general officers of the Association elected for 1937–38 were: president, Orval W. Adams, executive vice president, Utah State National Bank, Salt Lake City, Utah; first vice president, Philip A. Benson, president, Dime Savings Bank of Brooklyn, New York; second vice president, Robert M. Hanes, president, Wachovia Bank and Trust Company, Winston-Salem, N.C.; treasurer, M. H. Malott, president, Citizens Bank, Abilene, Kan.; executive manager, Dr. Harold Stonier, American Bankers Association, New York.

TRUST BUSINESS

By Gilbert T. Stephenson

Director, Trust Research Department, American Bankers Association

ADVANCED TRUST EDUCATION

The outstanding trends—trends rather than events—in the trust field during 1937 may be presented under these five headings: progress in advanced trust education; the development of organized, directed trust research; new emphasis upon costs and charges; provision for small trusts through common trust funds; and crystallizing sentiment for authoritative trust statistics.

In June 1937 the Graduate School of Banking, sponsored by the American Bankers Association, graduated the first class. About 25 of the 200 members of this class had majored in trusts—trust business and trust law. From now on, it is anticipated, between 30 and 35 men majoring in trusts will be graduated each year. This development is strikingly significant in that banking is one of the first businesses that has undertaken itself to provide advanced education for its devotees—and a type of advanced education which meets the strictest requirements of truly graduate work as carried on by American universities and graduate schools.

ORGANIZED, DIRECTED TRUST RESEARCH

On Jan. 1, 1937, the Trust Research Department of the Graduate School of Banking was organized, with a part-time director. In October the American Bankers Association put the organization and direction of trust research on a full-time basis. The work of the Department consists of two lines of activity. One is making researches in the trust field; the other, disseminating and interpreting the results of that research.

The research is being done by the Director of the Department and by the men majoring in trusts in the Graduate School of Banking, each of whom is required to prepare and present, as a condition precedent to graduation, a thesis involving trust research.

The dissemination and interpretation are being carried on through the publication of the findings in books and magazines, through Trust Research Weeks, and through lectures to law schools.

Four volumes of trust research are in process of publication in book form —*Studies in Trust Business,* Vol. I, by Gilbert T. Stephenson; *The Future of Trust Business—Its Association with Banking,* by John W. Remington of the Lincoln-Alliance Bank and Trust Company, Rochester, N.Y.; *Mortgage Pools for Trust Investment,* by M. F. Gstalder of the First National Bank, Williamsport, Penn.; and *Trust Department Examination,* by Edwin P. Neilan of the Federal Reserve Bank of Philadelphia.

Trust Research Weeks consist each of a week of intensive concentration upon trust business in a designated city, during which the Director of the Trust Research Department has interviews on trust subjects with the presidents and heads of trust departments of the trust institutions, conducts group conferences on technical trust subjects with the administrative and operative trust men of the city, and

makes public addresses on trust subjects to such groups as the Chamber of Commerce, the local bar association, the life underwriters' association, the general officers and directors of the banks and trust companies. During 1937 Trust Research Weeks were held in Rochester, St. Louis, Chicago, Detroit, Baltimore, and Atlanta.

The lectures to the law schools consist of discussions of practical, rather than legal, aspects of the drafting of wills and trust agreements, preparing the law students in some measure for the actualities of the drafting of trust instruments. Already 16 law schools have been reached, with a discussion of the discretionary powers of trustees under wills and trust agreements.

EMPHASIS UPON COSTS AND CHARGES

On account of the expense of servicing trust property—securities and real property—and of meeting the governmental requirements—examination, supervision, tax requirements—the cost of trust administration has been mounting rapidly. On account of the low return of trust investments, the compensation for trust service, which is based on income, has been diminishing. The result is that the gap between earnings and expense has been widening and a vast majority of the trust departments—said to be 11 out of 12—find themselves operating at a loss. Facing this situation rather stoically, the trust institutions have set themselves to the tasks (1) of finding out what it is costing them to do trust business and (2) of reducing costs in so far as the quality of the service is not jeopardized and of finding other ways to make trust business reasonably profitable to themselves without the compensation's becoming burdensome to the trust beneficiaries. The consequence is that the year 1937 was marked by emphasis upon the cost-analysis of trust departments and by a study of the scientific bases and sources of trust compensation. All of this inures to the benefit of the trust customers, in that a profitable trust department will have to render good service if it is to remain profitable, whereas a profitless trust department eventually must restrict its trust service.

PROVISION FOR SMALL TRUSTS THROUGH COMMON TRUST FUNDS

The promulgation by the Board of Governors of the Federal Reserve System of rules and regulations governing the collective investment of trust funds by national banks, coming at the very end of the year, was, undoubtedly, one of the most significant and promising things that has happened in the trust field in many a year. For years trust institutions everywhere have been grappling with the problem of the excessive cost of administering small trusts of $25,000 or under. As a matter of fact, most trusts by far, in the larger institutions even, are under $25,000. People with estates of $25,000 and under need trust service quite as much as do those with much larger estates. Trust institutions cannot, in fairness to their stockholders and customers, afford to administer at a loss such a large proportion of their trust business as these small trusts constitute. People with small estates cannot afford to put or leave them in trust if the cost to them of trust administration is very much higher than the cost of administering large trusts. This has been the dilemma presented by small trusts.

A partial solution seemed to be the collective investment of the funds of small trusts, thus reducing the cost of administration and at the same time obtaining sound diversification. New Zealand, Australia, Denmark, and Norway had largely solved the problem in this way. About 1930, several American trust institutions began to experiment with the collective investment of trust funds. The experiment was a distinct success. All went well until the taxing authorities imposed such tax and accounting requirements on the common trust funds as to jeopardize the very existence of them. Then, too, the Board of Governors of the Federal Reserve System, under Regulation F, practically prohibited the collective investment of trust funds.

In 1936, the Congress took the first step towards relief in this respect by

providing (Sec. 169, Revenue Act of 1936) that a common trust fund administered in accordance with rules and regulations promulgated by the Board of Governors of the Federal Reserve System would be relieved of these tax and accounting burdens. Now, with the promulgation of those rules and regulations, the stage is set for the profitable and economical administration of small trusts under strict governmental regulation and restriction. This indeed is the significant event of 1937 in American trust business.

CRYSTALLIZING SENTIMENT FOR AUTHORITATIVE TRUST STATISTICS

Up to the present one of the embarrassing features of trust business everywhere has been the absence of authoritative trust statistics. This has not been true of the United States only. It is equally true of English, Scottish, Irish, Canadian trust business. Trust men themselves have not known the national statistical facts about trust business that really they needed to know. The American people have not known the facts that they were entitled to know.

Such trust statistics as we have had have been practically useless and even worse than useless in that they permitted and encouraged wrong conclusions and impressions. For years the Comptroller of the Currency in his annual report has been publishing certain trust statistics of national banks. But there has been no attempt to arrive at a uniform method of valuing or of classifying trust assets for statistical purposes. Until these two things are done, trust statistics cannot present a true picture of the situation in this country.

In trust circles, as well as with the general public, there is a growing demand for authoritative trust statistics covering all trust institutions—state-chartered banks and trust companies as well as national banks. It looks now as though a basis of valuation and a method of classification soon may be evolved which will render practicable the collection and publication of authoritative trust statistics.

FOREIGN EXCHANGE

By Marcus Nadler

Professor, New York University

GENERAL

Except for a further depreciation of the French franc and the weakness in some of the South American currencies, the foreign exchanges during the year were relatively stable. The huge movement of gold to the United States which began in 1934 continued unabated during the first half of the year. During the second half, the trend was reversed and the United States on balance lost some gold. For the purpose of analysis the foreign exchange movement of the world may be divided into five major groups.

THE STERLING BLOC

The currencies adhering to the sterling bloc remained stable throughout the year. In fact the stability was greater than that which prevailed under the gold standard. The movement of the leading currencies adhering to the sterling bloc in relation to the pound sterling is shown in the table next page.

The stability of the currencies based on sterling was maintained primarily through funds accumulated in London and through aid granted by the Equalisation Account. So well did the sterling bloc operate during the past few years that no mention is ever made of a return to the gold standard in these countries. Early in the year Sweden planned to raise the value of the kroner in relation to the pound, in order to counteract the sharp increase in prices. However, when commodity prices throughout the world declined drastically toward

MOVEMENT OF CURRENCIES ADHERING TO STERLING BLOC IN RELATION TO £. 1937*

	Australia (Australian £') per 100 E£'s	Denmark (Kroner) per E£	Egypt (Piasters) per E£	Finland (Finmarks) per E£	New Zealand (N.Z.£) per 100 E£'s	Norway (Kroner) per E£	South Africa (S.A.£) per 100 E£'s	Sweden (Kroner) per E£	Argentina (Paper Pesos) per E£
Jan.	125	22.40	97.½	226.67	124.00	19.90	100.13	19.40	16.161
Feb.	125	22.40	97.½	226.50	124.00	19.90	100.13	19.40	16.240
Mar.	125	22.40	97.½	226.50	124.00	19.90	100.13	19.40	16.230
Apr.	125	22.40	97.½	226.46	124.00	19.90	100.13	19.40	16.171
May	125	22.40	97.½	226.19	124.00	19.90	100.13	19.40	16.242
June	125	22.40	97.½	226.13	124.00	19.90	100.13	19.40	16.20
July	125	22.40	97.½	226.13	124.00	19.90	100.13	19.40	16.428
Aug.	125	22.40	97.½	226.13	124.00	19.90	100.13	19.40	16.49
Sept.	125	22.40	97.½	226.13	124.00	19.90	100.13	19.40	16.50
Oct.	125	22.40	97.½	226.07		19.90		19.40	16.562

* Quoted indirectly in foreign currencies per English pound.

the second half of the year, these plans were abandoned.

THE DOLLAR

Although the United States dollar is linked to gold at the rate of $35 per ounce of gold, the dollar during 1937 fluctuated in relation to the pound as may be seen from the accompanying table.

DOLLAR FLUCTUATION IN RELATION TO £ DURING 1937

	Pound (cents)
January	490.75
February	489.39
March	488.51
April	491.63
May	493.99
June	493.55
July	496.72
August	498.22
September	495.30
October	495.51
November	499.6058
Dec. 1	498.5916
Dec. 8	499.5791
Dec. 15	499.775
Dec. 29	499.6875

The layman finds it difficult to understand the weakness of the dollar during the second half of the year. With so much idle gold accumulated in the country, one fails to see why gold was not shipped freely in order to prevent a depreciation of the dollar in terms of pounds sterling. The answer lies in the fact that trading in gold in the United States is restricted. Only the Treasury can export gold, and it sells only to foreign central banks and stabilization funds. For some reason, the Stabilization Fund of the United States did not wish to prevent a decline in the dollar. However, during the second half of the year considerable exports of gold from the United States took place but were counteracted to a large extent by an inflow of gold from Japan. The fact that the Treasury sold gold freely tended to alleviate the fear that the President of the United States contemplated a further reduction in the gold content of the dollar.

In spite of the outflow of gold from the United States during the latter part of 1937, a depletion of the idle gold now held in the United States is not anticipated. In the first place the amount of gold mined in 1937 may total about $1,300,000,000 to $1,500,000,000 and only a few countries are in a position to absorb this

gold. Furthermore, the political situation throughout the world is not conducive to repatriation of foreign funds from the United States on a large scale.

THE FORMER GOLD BLOC

The movement of the currencies of the former gold bloc countries, embracing France, Holland and Switzerland, did not move uniformly in relation to the dollar as may be seen from the following table:

FRANCE, HOLLAND AND SWISS CURRENCY IN RELATION TO DOLLAR 1937

Year and Month 1937	France (Franc)	Netherlands (Florin)	Switzerland (Franc)
January	4.6672	54.752	22.936
February	4.6555	54.686	22.829
March	4.5945	54.702	22.792
April	4.4963	54.757	22.824
May	4.4768	54.936	22.870
June	4.4399	54.976	22.879
July	3.8048	55.091	22.920
August	3.7501	55.151	22.963
September	3.3793	55.150	22.965
October	3.3491	55.284	23.021
November	3.3946	55.452	23.149
Dec. 1	3.3898	55.5132	23.098
Dec. 8	3.3961	55.600	23.1283
Dec. 15	3.3929	55.620	23.1294
Dec. 28	3.3968	55.625	23.12

While the Dutch guilder and the Swiss franc were strong during the year, the French franc remained weak. As a matter of fact, on June 30, 1937 the French Government was forced to modify the law of October 1, 1936 which devalued the franc. Under the October law, the government was authorized to fix the gold content of the franc by decree at not less than 43 and not more than 49 milligrams of .900 fineness instead of 65.5 milligrams. By decree of June 30, 1937, the French Government removed the upper and lower limits of the gold content of the franc and provided that it be fixed ultimately by decree of the Council of Ministers. Immediately after this date, the French franc declined sharply in relation to the dollar.

Toward the end of the year, however, under the influence of the repatriation of French capital from Great Britain and the United States, the franc showed a moderate improvement. The repatriation of French funds not only enabled the Bank of France to increase its monetary stock of gold, but also to repay the £40,000,000 loan to Great Britain.

The outlook for the French franc depends entirely upon political conditions within France. A restoration of confidence in the country may result in a heavy repatriation of foreign funds which, if not counteracted by the stabilization fund, may result in the appreciation of the French franc. However, since the cost of production in France is high, appreciation in the value of her currency is not expected.

THE SOUTH AMERICAN CURRENCIES

The fluctuation in the currencies of the South American countries during 1937 was determined primarily by economic conditions prevailing within each country. During the first half of the year, prices of agricultural and raw material commodities rose and the foreign trade of most South American countries showed an improvement. However, the decline in coffee prices had an adverse effect on the currencies of the leading coffee producing countries. The movement of the South American exchanges may be seen from the table next page.

The outlook for the various South American currencies differs widely. When in the past the prices of the raw materials and the agricultural commodities declined the governments endeavored to maintain the internal price level by depreciating their currencies. If commodity prices during 1938 should continue to remain low, a weakness in the South American currencies may be expected.

MOVEMENT OF LATIN AMERICAN EXCHANGES DURING 1937

Year and Month	Argentina (Peso)	Chile (Peso)	Colombia (Peso)	Cuba (Peso)	Uruguay (Peso)
January	32.718	5.1726	57.390	99.917	78.926
February	32.627	5.1731	57.234	99.917	78.856
March	32.570	5.1726	57.008	99.917	78.753
April	32.774	5.1725	56.956	99.918	78.626
May	32.928	5.1725	56.967	99.917	78.659
June	32.898	5.1738	57.006	99.919	79.143
July	33.107	5.1767	56.992	99.916	79.373
August	33.206	5.1571	56.997	99.917	79.250
September	33.020	5.1579	56.993	99.905	79.118
October	33.032	5.1694	56.999	99.915	79.052
November	33.308	5.168	55.9584	99.9166	79.1404
Dec. 1	33.2516	5.168	53.480	99.9166	79.170
Dec. 8	33.3183	5.168	53.400	99.9166	80.000
Dec. 15	33.3216	5.172	54.800	99.9166	80.000
Dec. 16	33.3204	5.168	54.650	99.9166	80.000
Dec. 17	33.3116	5.168	54.690	99.9166	80.000
Dec. 28	29.40	5.19	50.00		

FAR EASTERN CURRENCIES

In spite of the upheaval in the Far East caused by the Sino-Japanese conflict, the currencies of both China and Japan remained relatively stable. The stability of the yen was maintained primarily through the exportation of gold. During 1937 Japan exported to the United States Treasury approximately $250,000,000 of gold which was converted into dollars, and with these balances the Japanese Government maintained the stability of its currency throughout the world. In order to have available large quantities of gold for export the yen was devalued and thereby the amount of gold held by the Bank of Japan in terms of depreciated currency was increased. Furthermore, the Japanese Government is stimulating the production of gold in Japan and Korea as well as in Manchoukuo.

The stability of the Chinese dollar in the face of the defeat of the army and disorganization of industry and trade is due primarily to three factors. First, gold and foreign exchange were accumulated by the Chinese authorities prior to the outbreak of the hostilities and these funds enabled China to support its currency at least in part. Second, shortly after the outbreak of hostilities China exported large quantities of silver to Hongkong whence it was transferred to other countries. A part of this silver was utilized as collateral for foreign loans and gave additional foreign exchange to China with which to support its currency. The third, and perhaps most important, measure adopted by the Chinese Government in its effort to maintain the stability of its currency was the imposition of restrictions on exchange dealings. After the outbreak of hostilities the banks were closed and when they were reopened, all deposits were blocked with only small weekly withdrawals permitted. Furthermore, all foreign exchange transactions had to be carried out only in cash. The blocked deposits created a shortage of credit and forced a number of Chinese to sell their foreign exchange to the government in order to obtain currency. The Chinese Government found it necessary to impose these restrictions when it was discovered that the very wealthy Chinese nationals transferred about

$50,000,000 of their capital abroad.

How long China and Japan will be able to maintain the stability of their currencies is difficult to tell. In spite of the various restrictions imposed on its foreign trade Japan has a large excess of imports over exports. Furthermore, if the war is prolonged, both countries will undoubtedly suffer from currency inflation.

RESTRICTIONS AND STABILIZING FACTORS

The relative stability of the currencies of the various countries, in spite of the great political uncertainties that prevail in Europe and in the Far East, is not so much evidence of strength but rather reflects the disorganization of international trade. In a number of countries, rigid foreign exchange restrictions have been imposed and in fact in Germany the violation of the foreign exchange laws is punishable by death. To a large extent, international trade is regulated by clearing and compensation agreements, really a crude form of barter. Obviously countries surrounded by foreign exchange restrictions and other similar measures are in a position to maintain the stability of their currencies. However, these currencies can no longer be considered international in character. As a matter of fact, the Italian lira and the German mark are used almost entirely for domestic transactions.

Through the establishment of foreign exchange restrictions and government control of foreign trade the various governments are encouraging economic self-sufficiency. Agricultural countries throughout the world are endeavoring to develop manufacturing industries while industrial countries, notably Germany and Italy, are spending huge sums to establish factories to produce substitutes for raw materials which in the past had to be imported. Under these circumstances, therefore, the relative stability of the exchanges is a sign of weakness rather than an indication of strength. There is no reason to expect any material change during 1938.

FOREIGN TRADE

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FOREIGN TRADE EXPANSION IN 1936

Continuing the forward march of the preceding three years, foreign trade, in 1936, reached a new post-depression high mark with a total of $4,872,000,000 compared with $4,330,-300,000 for the calendar year 1935. The value of total exports was $2,453,-000,000, representing an advance of 8% in comparison with 1935; and, on a quantity basis, an increase of 5%. General imports were valued at $2,-419,000,000, a gain of 18% in value and of 11% in volume over the 1935 figure. The recovery in value from the low level of 1932 was 52% in exports and 83% in imports; compared with 1929, however, exports were only 53% and imports 45% of the figure for that year.

The export merchandise trade balance of $34,000,000 was the smallest recorded in the United States since 1893, when the balance of trade was over the import side. Net gold imports, for the third consecutive year exceeding $1,000,000,000, recorded a value of $1,117,000,000 which was about one-third less than the 1935 figure. Net silver imports, at $180,-000,000, were barely one-half the value of silver imports in 1935.

EXPORTS, IMPORTS, AND BALANCE OF TRADE OF THE UNITED STATES

[Values in millions of dollars. Data cover years ending June 30 through 1915; thereafter, calendar years]

Yearly average or year	Merchandise						Excess of exports (+) or imports (−)			
	Exports			General imports	Imports for consumption	Per cent general imports were of total exports	Merchandise	Gold	Silver	Merchandise, gold, and silver
	Total	United States merchandise	Re-exports of foreign merchandise							
1910–14	2,166	2,130	35	1,689	1,678	78.0	+477	+17	+20	+515
1921	4,485	4,379	106	2,509	2,557	55.9	+1,976	−667	−12	+1,297
1922	3,832	3,765	67	3,113	3,074	81.2	+719	−238	−8	+473
1923	4,167	4,091	77	3,792	3,732	91.0	+375	−294	−2	+79
1924	4,591	4,498	93	3,610	3,575	78.6	+981	−258	+36	+759
1925	4,910	4,819	91	4,227	4,176	86.1	+683	+134	+35	+852
1926	4,809	4,712	97	4,431	4,408	92.1	+378	−98	+23	+303
1927	4,865	4,759	107	4,185	4,163	86.0	+681	−6	+21	+695
1928	5,128	5,030	98	4,091	4,078	79.8	+1,037	+392	+19	+1,448
1929	5,241	5,157	84	4,399	4,339	83.9	+842	−175	+19	+686
1930	3,843	3,781	62	3,061	3,114	79.6	+782	−280	+11	+514
1931	2,424	2,378	46	2,091	2,088	86.2	+334	−145	−2	+186
1932	1,611	1,576	35	1,323	1,325	82.1	+288	+446	−6	+729
1933	1,675	1,647	28	1,450	1,433	86.5	+225	+173	−41	+358
1934	2,133	2,100	33	1,655	1,636	77.6	+478	−1,134	−86	−742
1935	2,283	2,243	40	2,047	2,039	89.7	+235	−1,739	−336	−1,839
1936	2,453	2,416	37	2,419	2,421	98.6	+34	−1,117	−180	−1,263

FOREIGN TRADE FOR TEN MONTHS 1937

Foreign trade from January to October, 1937, exhibited a much larger expansion than during the calendar year 1936. Total exports for this ten-months period were valued at $2,712,000,000 which represents an advance of 35.6% in value and of 26.4% in quantity compared with the preceding ten-months period. General imports, at $2,652,000,000, were 33.9% greater and, on a quantity basis, 16% larger. The merchandise export trade balance amounted to $60,000,000. Net gold imports had again reached enormous proportions, the value for the 10-months period of 1937 having been $1,545,000,000, an advance of nearly 70% compared with the like period of 1936. Net receipts of silver amounted to $54,000,000, about one-third of the prior year figure.

Exports of finished manufactures advanced 40% to account for 49.8% of domestic exports compared with 48.1% in the January–October period of 1936. Machinery exports advanced 43%, with agricultural implements and machinery leading the way with an increase of 73%, followed by industrial machinery with 49.6%, and electrical machinery and apparatus, 24.0%. Shipments of automobiles gained 45.8% with motor trucks registering an improvement of 75.5% and passenger cars 34.3%.. Refined petroleum products registered an increase by reason of a 46.3% growth in the value of gasoline exports and of 32% in shipments of lubricating oil. Cotton manufacturers were 34% greater; iron and steel advanced manufactures and rubber manufactures each improved 37.8%; paper and manufactures were up 38.3%; while

photographic and projection goods registered the comparatively modest advance of 9.6%.

Semi-manufactured exports registered an increase of 73.4% to reach second place in the export groups according to economic classes. Comprising 21.1 per cent of domestic exports, this group was greatly aided by the 173.5% gain in value of iron and steel mill products and the 98.3% expansion in copper shipments. Chemicals (coal tar, industrial and medicinal) increased 26.9%; sawmill products improved 21.9%; naval stores, gums and resins gained 22.5%; leather was 13.5% greater; and furs and manufactures showed practically no change.

Exports of crude materials were only 8 per cent greater and comprised 21% of domestic exports compared with 26.4% in the January–October period of 1936. This proportionate decline was due largely to the small improvement of 4% in unmanufactured cotton shipments, and to the 9.2% decline in exports of unmanufactured tobacco. However, shipments of crude petroleum were greater by 42.7% and coal and coke exports by 23.3%. Crude foodstuffs registered a 40% gain but comprised the same small percentage of the total, *viz,* 2.6%. The entire improvement in this group was due to the advance of over 1000% in the value of wheat exports. Shipments of fruits and nuts declined 8.9% while the decrease in apple shipments was 18.9%. Manufactured foodstuffs and beverages gained 14%, in spite of a decline of 5% in packing-house products. Lard gained 5.9% and canned fruits improved 1.8%, but meats dropped 6.8%. Shipments of flour contributed largely to the advance in this group, with an increase of 42%.

FOREIGN TRADE IN MERCHANDISE, BY COMMODITY CLASSES

(January–October, 1936–1937)

(Proportion composed of each class and % changes)

	Proportion of Domestic Exports			Proportion of Imports for Consumption		
	Jan.–Oct. 1936 %	Jan.–Oct. 1937 %	Change in Value 1936–37 %	Jan.–Oct. 1936 %	Jan.–Oct. 1937 %	Change in Value 1936–37 %
Crude Materials	26.4	21.0	8	30.1	32.3	40.4
Crude Foodstuffs	2.5	2.6	40	14.0	14.2	32.3
Manufactured Foodstuffs	6.4	5.3	14	16.3	14.8	18
Semi-Manufactures	16.6	21.2	73.4	20.2	21.0	36
Finished Manufactures	48.1	49.8	40	19.4	17.8	21

GEOGRAPHICAL DISTRIBUTION OF 1937 EXPORTS

All continental areas shared in the general advance in American exports during the 10-months period of 1937. Shipments to Latin America and to Asia were greater by 50%. Venezuelan sales were 100% larger and shipments to the Netherland West Indies were up 153%. Other significant increases in the Latin American export picture were Argentina, 66%; Chile and Mexico, each 50%; Colombia, 46%; Cuba, nearly 40% and, Brazil, 35%.

In the Asiatic markets, exports to Kwantung (a lesser market at the lower end of Manchuria) advanced over 200%; to Turkey, 140%; and to Netherland India, 100%. The major Asiatic market, Japan, improved 54.6%; the Philippines advanced 42%; and British India increased 41%. Shipments to China were 18.3% greater.

Exports to Canda advanced 37.3%. African markets expanded by 32%, with sales to the Union of South Africa increasing by 25.8% Europe, our largest continental market, registered an improvement of 25.4% which was distributed unevenly among the several countries. Markets where a greater than average increase occurred, with the percentage gain over the 10-month period of 1936, were Netherlands, 75.4%; Belgium, 66%; Sweden, 54.8%; Italy, 35.3%; and France, 27.1%. It may not be without significance that of these countries, Italy is the only one that is not party to a reciprocal trade agreement with the United States. Smaller advances in sales to major European markets were Germany, 18.5%; United Kingdom, 14.7%; and U.S.S.R., 7.5%. Spanish sales declined 21.4%. Shipments to the lesser markets of Czechoslovakia and Rumania advanced 180% and 100%, respectively.

Oceania showed an increase of 17.1%, with New Zealand improving 27% and Australia, 13.3%.

GEOGRAPHICAL DISTRIBUTION OF 1937 IMPORTS

In the import trade for the 10-month period of 1937 crude materials advanced 40.4 per cent and comprised 32.3% of the total compared with 30.1% in the 1936 period. Crude rubber receipts were 58.3% greater in value. Raw silk advanced only 14% and furs and manufactures 16.5%. Hides and skins increased nearly 39%. Receipts of wool and mohair expanded 123.4 per cent and were slightly greater in value than imports of raw silk. Crude petroleum declined 11% but oil-seeds gained 86.7%. Unmanufactured tobacco and unmanufactured vegetable fibres improved 12.1% and 18.2%, respectively.

Semi-manufactured imports, the second largest group in the 10-months period of 1937, gained 36%. Leading commodities in this group, with their percentages of increase, were wood pulp, 21.7%; vegetable oils, expressed, 35.7%; chemicals, 28.3%; tin, 38.1%; diamonds, 54.3%; copper, 83.7% (after having registered a decline during the calendar year 1936); and sawmill products, nearly 21%.

Imports of finished manufactures, with a rise of 21%, comprised a somewhat smaller proportion of the total than in the corresponding ten-months period of 1936. Receipts of newsprint improved 28.5%; cotton manufacturers 24.4%; burlap, 18.3%; flax, hemp and ramie manufactures, 12.6%; wool manufactures, 18.6%. Imports of art works were 11.2% less in value.

Receipts of manufactured foodstuffs and beverages were 18% greater in value; while crude foodstuffs advanced 32.3%. The proportionate standing of the latter group was slightly improved but the former was somewhat less. Imports of cane sugar were only 4.5% greater in value. Coffee receipts advanced 15.7%; wines and spirits recorded a slight recession; fruits and nuts gained 19.7%; cocoa or cacao beans improved 97.3%; packing-house products were 36.7% more; fish advanced 11.3% and grains (feed and other) reflected the drought situation with an improvement of 309.5%. Receipts of wheat, on the other hand, were 49.2% less.

The gain of nearly 34% in the import trade was distributed unevenly among the several continental areas. Imports from Oceania and from Africa were double the value of imports during the 10-months prior year period. Both Australia and New Zealand shared in this advance, each with an increase of 100%. Receipts from the Union of South Africa were 151% greater.

Latin America displayed an improvement of 40.6%, increases for the several major countries being Argentina, 156%; Chile, 86.5%; Mexico, 28%; Brazil, 24.4%; Colombia, 24.0%; and Cuba, 17.2%. Imports from Venezuela declined 10%.

European shipments to the United States ranked second among the continental areas and advanced 25.1% over the value for the 10-months period of 1936. Major countries, with the respective percentages of increases, were Belgium, 45.4%; U.S.S.R., 46.1%; Italy, 26.0%; Sweden, 23.0%; France, 22.0%; Netherlands, 17.3%; Germany, 18.1%; and United King-

dom 11%. Imports from two less important sources—Denmark and Rumania—advanced 152% and 100%, respectively. Receipts from Spain declined 20% because of civil strife.

Canada shared also in the general improvement in United States import trade, shipments from that country gaining 15.8% compared with the January–October, 1936 period.

COMMODITY CHARACTER OF 1936 EXPORTS

Finished manufactured goods continued to lead the export commodity groups, comprising 47.7% of the total. The improvement in shipments of this class of merchandise was 16% in value and 15% in quantity, thus constituting the most pronounced improvement of any of the groups. The continued prominence of this class in our export trade suggests something of the importance of foreign markets to the industrial output of the United States.

The leading commodity in the group and second in the entire list of articles exported, is machinery. The value of machinery exports was $334,900,000, an advance of 27% over 1935. Agricultural implements and machinery, with an increase of 38%, were valued at $44,000,000; industrial machinery improved 30% to $158,500,000; and electrical machinery and apparatus gained 20% to a value of $91,300,000.

Automobiles, parts and accessories, with a value of $240,200,000, showed an improvement of 6%. Exports of passenger cars increased 9% to $103,000,000; and motor trucks gained 8% to a value of $54,700,000. Automobile parts and engines, with a value of $77,700,000, declined fractionally.

Refined petroleum products advanced 4% over the 1935 figure and recorded a value of $176,700,000. Shipments of gasoline declined 3% to a value of $62,000,000 but lubricating oil improved 5% to $64,500,000 and gas and fuel oil, with an increase of 28%, recorded a value of $35,000,000. Exports of illuminating oil at $14,800,000 were slightly lower.

Cotton manufactures, including yarn, advanced 13% to a value of $43,700,000. Iron and steel advanced manufactures, at $37,900,000, were 21% greater. Rubber manufactures were slightly improved at a value of $23,400,000; while automobile tires, at $9,800,000, were somewhat less in quantity but slightly greater in value. Air craft, parts and accessories, increased by the substantial amount of 60.8% to a value of $23,000,000. Paper and manufactures advanced 10% to $22,500,000; photographic and projection goods gained 20% to a value of $20,900,000; books and printed matter rose 26% to $19,900,000; medicinal and pharmaceutical preparations, at $14,400,000 improved 18%; and paints and varnishes were 8.5% higher, with a value of $7,600,000.

Exports of crude materials, with a value of $668,000,000 were 2% lower than the 1935 figure, the quantity being 4% less. This group comprised 27.7 per cent of total exports.

The leading commodity exported from the United States—unmanufactured cotton—led the crude materials group. Shipments of raw cotton declined 8% in quantity and 7% in value to $361,000,000. Unmanufactured tobacco, at $137,300,000, recorded an increase of 2% and the quantity was 7% greater. Crude petroleum shipments, valued at $66,100,000, were 9% higher in spite of a decline of 2% in the tonnage. Coal and coke, at substantially the same quantity, improved 9% to a value of $56,600,000.

Semi-manufactures, the only other export group with finished manufactures, to register an increase in value over the 1935 figure, increased 13% to a value of $394,000,000. The quantity was 6% greater and the group comprised 16.3% of the total. Iron and steel mill products advanced 6.4% in tonnage and 26.5% in value to $111,900,000. Chemicals gained 13.1% to a value of $70,500,000, with industrial and medicinal chemicals displaying the greatest improvement. Copper shipments, in spite of a decline of 13% in volume, were 4% greater in value, the figure being $50,700,000. Sawmill products improved 6% to $43,300,000; furs and manufactures gained 14% to $19,100,000; naval

FOREIGN TRADE IN MERCHANDISE, BY ECONOMIC CLASSES

[Values in millions of dollars. Import data are "general" imports through 1933, except 1933 in italics; the latter and 1934 are imports for consumption. Data cover years ended June 30 for 1910–14, thereafter calendar years]

Yearly average or year	Total value	Crude materials		Crude foodstuffs		Manufactured foodstuffs		Semi-manufactures		Finished manufactures	
		Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent
EXPORTS OF UNITED STATES MERCHANDISE											
1910–14	2,130	713	33.5	127	5.9	295	13.8	342	16.0	654	30.7
1921	4,379	984	22.5	673	15.4	685	15.7	410	9.4	1,627	37.1
1922	3,765	988	26.3	459	12.2	588	15.6	438	11.6	1,292	34.3
1923	4,091	1,208	29.5	257	6.3	583	14.3	564	13.8	1,478	36.1
1924	4,498	1,333	29.6	393	8.7	573	12.8	611	13.6	1,588	35.3
1925	4,819	1,422	29.5	318	6.6	574	11.9	662	13.7	1,843	38.3
1926	4,712	1,261	26.8	335	7.1	503	10.7	656	13.9	1,957	41.5
1927	4,759	1,193	25.1	421	8.8	463	9.7	700	14.7	1,982	41.6
1928	5,030	1,293	25.7	295	5.9	466	9.3	716	14.2	2,260	44.9
1929	5,157	1,142	22.2	270	5.2	484	9.4	729	14.1	2,532	49.1
1930	3,781	829	21.9	179	4.7	363	9.6	513	13.6	1,898	50.2
1931	2,378	567	23.8	127	5.3	247	10.4	318	13.4	1,120	47.1
1932	1,576	514	32.6	89	5.7	152	9.7	197	12.5	624	39.6
1933	1,647	591	35.9	48	2.9	155	9.4	237	14.4	617	37.4
1934	2,100	653	31.1	59	2.8	168	8.0	342	16.3	879	41.8
1935	2,243	683	30.4	59	2.6	157	7.0	350	15.6	994	44.3
1936	2,416	668	27.7	58	2.4	144	5.9	394	16.3	1,152	47.7
IMPORTS											
1910–14	1,689	595	35.2	203	12.0	194	11.5	307	18.2	389	23.1
1921	2,509	859	34.2	300	12.0	368	14.7	362	14.4	620	24.7
1922	3,113	1,180	37.9	330	10.6	387	12.4	553	17.8	663	21.3
1923	3,792	1,407	37.1	363	9.6	530	14.0	721	19.0	771	20.3
1924	3,610	1,258	34.9	425	11.8	522	14.4	665	18.2	749	20.8
1925	4,227	1,748	41.4	495	11.7	433	10.2	755	17.9	796	18.8
1926	4,431	1,793	40.5	540	12.2	418	9.4	804	18.1	877	19.8
1927	4,185	1,601	38.3	505	12.1	451	10.8	750	17.9	879	21.0
1928	4,091	1,467	35.8	550	13.4	406	9.9	763	18.6	906	22.2
1929	4,399	1,559	35.4	539	12.2	424	9.6	885	20.2	994	22.6
1930	3,061	1,002	32.7	400	13.1	293	9.6	608	19.9	757	24.7
1931	2,091	642	30.7	305	14.6	222	10.6	372	17.8	549	26.3
1932	1,323	358	27.1	233	17.6	174	13.2	217	16.4	341	25.7
1933	1,450	418	28.8	212	14.6	205	14.1	292	20.1	322	22.2
1933	*1,433*	*420*	*29.3*	*215*	*15.0*	*191*	*13.3*	*290*	*20.2*	*317*	*22.1*
1934	1,636	461	28.2	254	15.5	264	16.1	307	18.8	350	21.4
1935	2,039	582	28.6	322	15.8	319	15.6	410	20.1	406	19.9
1936	2,421	733	30.3	349	14.4	384	15.8	490	20.2	466	19.2

stores, gums and resins were up 10% to a value of $18,900,000; while leather shipments declined 15% to $16,400,000.

Manufactured foodstuffs, including beverages, with 5.9% of total exports, decreased 9% to a value of $144,000,000, and receded 11% in quantity. This was the second consecutive year to witness a decline in exports of this group. Packing house products dropped 2% in quantity and 4% in

value to $41,700,000. Shipments of lard, at $13,500,000 were improved 15%; while meat products, at $25,400,000, were 11% less. Due largely to the maritime strike on the Pacific Coast, shipments of canned fruits were down 21% to $18,900,000. Wheat flour exports, at $17,500,000, represented an increase of 17% with a quantity 10% greater.

For the third consecutive year, crude foodstuffs represented practically an identical dollar value. With a quantitative decline of 6%, the value of crude foodstuffs shipments fell only 1% to $58,000,000. The Pacific Coast maritime situation accounted partly for the decrease of 12% in exports of fruits and nuts, other than canned, to a value of $61,600,000. Dried and evaporated fruits, at $20,100.000, were down 17%; fresh apples, with a value of $13,000,000, were 25% less; and oranges were 17% lower to a value of $11,300,000. Barley, grain and malt improved 8% to $4,700,000; and wheat grain, with a value of $1,800,000, was vastly improved over the $212,000 figure of 1935.

COMMODITY CHARACTER OF 1936 IMPORTS

As in the year 1935, all commodity groups shared in the 18% increase in general imports, although the percentage of increase varied among the several groups. The leading group—crude materials—registered the greatest improvement over the 1935 figure —an advance of 25.9% to a value of $733,000,000. Receipts of crude materials comprised 30.3% of total imports. Price increase accounted largely for the expansion in this group, since the quantity gain was only 6.5%. This appears from an examination of the leading article imported into the United States and also the leading crude material import. Crude rubber, with a value of $158,700,000 was 33% greater but the quantity was only 4% more. Raw silk, at $102,400,000 was 7% higher but the quantity was 11% less. Imports of furs and manufactures, at $81,600,000, were 55% greater. Hides and skins, with a quantity improvement of 2%, rose 20% in value to $58,000,000. Wool and mohair gained 27% in volume and the value of $53,300,000 was 78% higher. Receipts of oilseeds, at $37,000,000, were 8% more; flaxseed alone improved 13% in value to $17,600,000, in spite of a shrinkage of 13% in quantity. Unmanufactured tobacco advanced 7% in volume and 16% in value to $29,900,000. Unmanufactured fibres other than flax or cotton rose 50% to $24,100,000. Crude petroleum was unchanged at a value of $23,300,000, while the quantity was slightly greater.

Of the commodity groups, imports of semi-manufactured goods registered the second best improvement over 1935. The value of $490,000,000 represented 20.2% of total imports; and it was an advance of 19.6% over the 1935 value and of 17.5% over the quantity of that year. Receipts of paper base stocks amounted to $98,900,000; of this sum, wood pulp comprised $82.800,000, which represented an advance of 17% in both value and tonnage. Vegetable oils, expressed, at $85,300,000 were 8% higher. Chemicals, with a value of $80,000,000, improved 16.4%, the gain occurring principally in industrial chemicals and fertilizers. Tin (bars, blocks and pigs) were up 18% in tonnage and 8% in value to $75,500,000. Diamonds, at $33,300,000, were 38% greater and the quantity was 25% more. Copper, including ores and manufactures, declined 31% in tonnage and 10% in value to $29,900,000. Sawmill products advanced 20% to $23,500,000, with boards, lumber and cabinet woods improving 46% to a value of $16,500,000. Nickel ore, matte and alloy, at $23,800,000 were 39% greater. Iron and steel mill products gained 30% and were valued at $21,500,000.

Imports of finished manufactured goods, valued at $466,000,000, comprised 19.2% of the total. The 1936 value was an advance of 14.8 per cent and the quantity was 17.1% greater than in 1935. Paper and manufactures, at $110,100,000 increased nearly 20%; newsprint, at $96,700,000, alone gained 15% in tonnage and 18% in value. Cotton manufactures at $48,600,000 were 19% higher; cotton cloth

with an increase of 79% in quantity and of 50% in value was recorded at $10,500,000. Burlaps advanced 18% in quantity and 7% in value to $35,400,000. Manufactures of flax, hemp and ramie, at $30,300,000 were 20% more; manufactures of wool, including yarns, increased 50% to $29,600,000; art works gained 20% to $25,900,000; and petroleum, advanced and refined, increased 14% in volume and 22.4% in value to $16,400,000.

Manufactured foodstuffs, including beverages, advanced 11.2% in quantity and 20.3% in value to $384,000,000—which comprised 15.8% of the total. Crude foodstuffs registered the smallest improvement of any of the import commodity groups. Receipts of commodities in this group were 3.7% greater in volume and were 8.2% higher in value to $349,000,000—of 14.4% of the total. These two groups reversed the positions that they occupied in 1935.

The second leading import commodity—cane sugar—increased slightly in quantity but improved 16.5% in value to $155,400,000. The third leading article—coffee—declined 1% in volume and 2.5% in value to $134,000,000. Wines and spirits advanced 90% in quantity and 83% in value to $75,300,000. Receipts of fruits and nuts were 6% greater, the value being $58,000,000. Wheat, including that for milling and for export, advanced 15% in quantity and nearly 30% in value to $11,900,000. Cocoa or cacao beans increased 4% in quantity and 24% in value to $33,000,000. Packing house products as a group, declined 10% to $31,000,000. Meat products, valued at $25,600,000 revealed a rise of 33%; but fats and ores shrunk 64% to $5,400,000. Fish, including shellfish, gained 10% and was recorded at $30,400,000; feed grains, at $25,500,000 were down 20%; vegetables and preparations advanced 9% to $20,100,000; tea imports decreased 4% in quantity but rose 5% in value to $17,800,000; dairy products gained 8% and were valued at $16,100,000; fodders and feeds declined 6% to $12,200,000; and spices increased 19% to a value of $12,500,000.

GEOGRAPHIC DISTRIBUTION OF EXPORTS, CALENDAR YEAR 1936

The expansion of 7.5% in total exports in 1936 compared with 1935 was not evenly distributed among the several continental markets. Northern North America, Africa and South America shared to a larger degree in the expansion in export markets, while Europe, Asia and Oceania reflected a much smaller degree of increase.

As usual, Europe was the leading continental market for American merchandise, but the 1936 figure of $1,040,300,000 was only 1.1% in excess of the 1935 value; and it comprised only 42.4% of the total. This is the smallest proportion of our export trade taken by Europe in any year.

A complexity of forces affected our trade with continental Europe in 1936. Mention should be made of the civil war in Spain, which hampered particularly the trade with that country; the system of exchange controls and clearing agreements which continued in operation in a number of countries, especially Germany and Italy; and the financial crisis in the "gold bloc" countries, which culminated in the devaluation of the French franc and other gold bloc currencies late in September.

Exports to the United Kingdom, amounting to $439,950,000 were only 1.5% greater than in 1935, chiefly because of the sharp decline in shipments of foodstuffs and tobacco. The United Kingdom continued as our leading export market. France maintained fourth position and Germany fifth, with export values and percentages of improvement over 1935 of $129,535,000 (10.7%) and $100,585,000 (9.4%), respectively.

Large increases were recorded in exports to Czechoslovakia and Finland; shipments to the former advanced 43.3% to $4,650,000 and to the latter, 22.1% to $7,500,000. Norway increased 13.3% to $15,400,000 and Sweden gained 12.7% to a value of $43,100,000. Shipments to U.S.S.R. registered the large increment of 35.1% and were valued at $33,400,000. Netherlands, at $52,800,000, showed a

FOREIGN TRADE BY CONTINENTS AND GREAT TRADE REGIONS

NOTE.—Exports include re-exports of foreign goods. Data for 1910–14 cover years ended June 30; all other are for calendar years. The Philippine Islands are included in Asia for all years; Turkey in Europe is included in Asia beginning 1928.

[Values in millions of dollars]

Yearly average or year	Total	North America				South America		Europe		Asia		Oceania		Africa	
		Northern		Southern											
		Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent
EXPORTS															
1910–14.	2,166	320	14.8	181	8.4	121	5.6	1,350	62.3	121	5.6	48	2.2	25	1.1
1921....	4,485	600	13.4	529	11.8	273	6.1	2,364	52.7	533	11.9	113	2.5	73	1.6
1922....	3,832	583	15.2	332	8.7	226	5.9	2,083	54.4	449	11.7	102	2.7	56	1.5
1923....	4,167	661	15.8	426	10.2	269	6.5	2,093	50.2	511	12.3	146	3.5	61	1.5
1924....	4,591	634	13.8	456	9.9	314	6.8	2,445	53.3	515	11.2	157	3.4	70	1.5
1925....	4,910	659	13.4	480	9.8	403	8.2	2,604	53.0	487	9.9	189	3.9	89	1.8
1926....	4,809	748	15.5	429	8.9	444	9.2	2,310	48.0	565	11.7	213	4.4	101	2.1
1927....	4,865	845	17.4	408	8.4	438	9.0	2,314	47.6	560	11.5	194	4.0	107	2.2
1928....	5,128	924	18.0	397	7.7	481	9.4	2,375	46.3	655	12.8	180	3.5	117	2.3
1929....	5,241	961	18.3	434	8.3	539	10.3	2,341	44.7	643	12.3	192	3.7	131	2.5
1930....	3,843	671	17.5	349	9.1	338	8.8	1,838	47.8	448	11.7	108	2.8	92	2.4
1931....	2,424	404	16.7	187	7.7	159	6.5	1,187	49.0	386	15.9	42	1.7	60	2.5
1932....	1,611	246	15.3	119	7.4	97	6.0	784	48.7	292	18.2	37	2.3	36	2.2
1933....	1,675	215	12.8	126	7.5	114	6.8	850	50.7	292	17.4	35	2.1	43	2.6
1934....	2,133	308	14.4	178	8.3	162	7.6	950	44.5	401	18.8	57	2.7	77	3.6
1935....	2,283	330	14.4	202	8.8	174	7.6	1,029	45.1	378	16.6	74	3.2	96	4.2
1936....	2,453	391	16.0	225	9.2	205	8.3	1,040	42.4	399	16.3	79	3.2	114	4.7
GENERAL IMPORTS															
1910–14.	1,689	119	7.0	229	13.5	207	12.2	836	49.5	259	15.3	17	1.0	23	1.3
1921....	2,509	338	13.5	417	16.6	296	11.8	765	30.5	618	24.6	35	1.4	40	1.6
1922....	3,113	367	11.8	456	14.6	359	11.5	991	31.8	827	26.6	49	1.6	65	2.1
1923....	3,792	418	11.0	583	15.4	467	12.3	1,157	30.5	1,020	26.9	59	1.6	87	2.3
1924....	3,610	402	11.1	593	16.4	466	12.9	1,096	30.4	931	25.8	49	1.4	73	2.0
1925....	4,227	459	10.9	522	12.3	519	12.3	1,238	29.3	1,319	31.2	78	1.8	92	2.2
1926....	4,431	486	11.0	526	11.9	568	12.8	1,286	29.0	1,401	31.6	68	1.5	96	2.2
1927....	4,185	484	11.6	501	12.0	518	12.4	1,276	30.5	1,257	30.0	55	1.3	93	2.2
1928....	4,091	500	12.2	461	11.3	569	13.9	1,249	30.5	1,169	28.6	53	1.3	90	2.2
1929....	4,399	514	11.7	467	10.6	640	14.5	1,333	30.3	1,280	29.1	57	1.3	109	2.5
1930....	3,061	414	13.5	347	11.3	434	14.2	909	29.7	856	28.0	33	1.1	68	2.2
1931....	2,091	277	13.3	240	11.5	307	14.7	640	30.6	574	27.5	19	.9	33	1.6
1932....	1,323	181	13.7	157	11.9	201	15.2	389	29.4	362	27.4	8	.6	24	1.8
1933....	1,550	191	13.2	127	8.8	202	14.0	462	31.9	426	29.4	13	.9	28	1.9
1934....	1,655	238	14.4	161	9.7	229	13.8	489	29.6	490	29.6	15	.9	33	2.0
1935....	2,047	293	14.3	201	9.8	281	13.7	599	29.2	605	29.5	26	1.3	42	2.0
1936....	2,419	381	15.8	237	9.8	292	12.0	717	29.7	705	29.1	36	1.5	51	2.1

modest gain of 7.5% while Belgium barely moved ahead with a value of $58,800,000.

Our exports to a number of European countries declined sharply in 1936. Shipments to Spain declined 47.8% to $21,600,000; those to Portugal were 21.5% smaller and were valued at $8,500,000; to Italy, they were 18.8% smaller to record a value of $58,800,000; and to Poland and Danzig were down 17.2% to $20,300,000. Decreases ruled also in the case of Denmark with a decline of 3.5% to $12,000,000 and of Greece with a drop of 8.0% to $6,000,000.

Latin America (Southern North America and South America) took

second place among the continental markets for United States merchandise, accounting for 17.5% of the total. The value of shipments to Latin America was $429,500,000, representing a gain of 14.1% over 1935. South American countries bought $204,300,000 worth of American merchandise, an increase of 17.2%; while the countries of Southern North America purchased $225,200,000 worth, an advance of 11.6%.

Mexico was our leading Latin American market with $76,000,000, an increase of 16.0%. Cuba showed an improvement of 12.1% to a value of $67,400,000. Sales to Argentina advanced 15.3%, the value being $56,900,000. Brazil, with $49,000,000, was 12.3% more than in 1935. Colombia recorded an advance of 29.1% to a value of $27,900,000; and Venezuela, with an increase of 29.6%, recorded a value of $24,000,000. Shipments to Panama gained 9.2% to $22,700,000; Chile continued to improve, the percentage being 5.3 and the value $15,700,000; Netherland West Indies declined 1.4% to $14,100,000; but Peru advanced 10.4% to $13,400,000; Uruguay gained 37.1% to $8,500,000; and Ecuador improved 17.0% to a value of $3,300,000. Two Central American countries,—Costa Rica and Guatemala—increased appreciably by 30.6% and 16.2%, the values being $3,000,000 and $4,500,000, respectively. Exports to Honduras dropped 12.9% to $4,900,000 and to Nicaragua they dipped slightly to $2,400,000. Haiti, with $3,900,000, advanced 21.3%; Santa Domingo increased 1.3% to $4,500,000; and Jamaica declined 3.7% to a value of $3,900,000.

Asia, which, last year, was the second largest continental market for American exports, surrendered this position to Latin America and took third place. Shipments to Asiatic countries advanced only 5.5% over 1935 and were valued at $398,800,000, which represented 16.3% of total exports. Japan, still our third leading world market, showed an advance of only .5% to a value of $204,300,000. The Philippines increased 14.6% to $60,300,000; China gained 22.7% to $46,800,000; and Netherland India showed an improvement of 26.4% with a value of $13,700,000. The British Indian market declined 14.7% to $26,800,000 and the less important markets of Hong Kong and Kwangtung also revealed a loss. Exports to Turkey advanced 39.6% to a value of $6,200,000 and to British Malaya, 11.6% to $5,000,000.

Northern North America recorded a substantial improvement of 18.8% and comprised 16% of total exports compared with 14.4% in 1935. Our second largest world market, the Dominion of Canada, advanced by a like percentage to a value of $383,900,000. Newfoundland and Labrador gained 17.6% to a value of $7,200,000.

African markets displayed an improvement of 18.7%, accounted for a value of $114,200,000 and comprised 4.7% of total exports. This continent now buys 218% more American merchandise than it did in 1932. British South Africa was almost as large a market as Mexico, registering a value of $71,200,000—an increase of 32.8%. Egypt declined 4.2% to $10,000,000 but British West Africa, with a value of $7,500,000, gained 38.4%. Similarly, Portuguese Africa increased 14.8% to $6,800,000 and Alegeria and Tunisia, with $3,000,000, were 21.1% larger.

Oceania, with $79,100,000, gained 7.3% over 1935 and comprised 3.2% of total exports. Shipments to Australia improved only 2.5% to $58,500,000, while exports to New Zealand, with a value of $19,500,000, were nearly 25% greater.

SOURCES OF 1936 IMPORTS

Europe supplanted Asia as the leading continental source of American imports. Purchases from Europe, valued at $717,300,000, gained 19.8% over 1935, and comprised 29.7% of total imports. Receipts from all major European sources increased, with the exceptions of Denmark and Spain. These two countries declined 8.7% and 7.4% respectively to values of $3,000,000 and $18,500,000.

Our second world supplier—the United Kingdom—gained 29.1% to a value of $200,400,000. Germany, while our second European source of

imports, improved by the small margin of 2.3% to $79,600,000. France, with $65,200,000, showed an improvement of 12.3%. Imports from each of the other European countries with which reciprocal trade agreements were in effect during a part or the whole of the year increased sharply in 1936. Thus, gains were recorded in imports from Belgium, 47.9%, with a value of $58,900,000; Netherlands, 23.2%, $50,000,000; Sweden, 16.8%, $48,100,000; Switzerland, 27.0%, $20,600,000; and Finland, 26.7%, $15,400,000. With an increase of less than 4 per cent, imports from Italy reached a value of $40,200,000. Czechoslovakia gained 9.8% to $23,500,000; Norway improved 30.8% to $21,600,000; U.S.S.R. advanced 15.2% to $20,500,000; Poland and Danzig were up 26.0% to $12,100,000; and Greece, with $10,700,000, was 7.1% greater. Imports from Portugal, valued at $6,900,000, were improved nearly 90%.

Asia, with 29.1% of the total, revealed an advance of 16.6% to a value of $704,900,000. All major Asiatic sources of imports shared in the expansion. Japan again was third among all countries as a supplier of merchandise to the United States. The 1936 figure of $171,700,000 was an improvement of 12.3%. Due to our purchases of tin, British Malaya advanced 27.7% to a value of $168,000,000—our fourth world source. The Philippine Islands gained only 2% to a value of $98,800,000; China was 15.8% larger to a value of $74,300,000; British India advanced 13.5% and recorded a value of $70,300,000; and Netherland India improved substantially to the extent of 38.8% to a value of $69,800,000. Imports from the lesser sources of Kwantung and Hong Kong displayed a decline. Turkey gained 26% to a value of $9.800,000.

Latin American countries gained 9.5% compared with 1935 and comprised 21.8% of total imports. Southern North America advanced 17.7% to a value of $237,000,000 which represented 9.8% of the total; while South America, with $291,600,000, was 3.6% greater and accounted for 12% of the whole.

Our leading Latin American supplier—Cuba—improved 22.2% to a value of $127,500,000. Argentina, with $65,900,000, barely exceeded the 1935 figure. Brazil, with $102,000,000, showed an expansion of only 2.3%. Shipments from Mexico gained 15.3% to $48,900,000 while Colombia declined 14.3% to $43,200,000. Venezuela was 22.3% larger and the value was $26,200,000. With a value of $25,800,000, Chile was 7.3% greater. Netherland West Indies advanced 18.1% to $14,800,000 and Uruguay gained the substantial proportion of 77.7% to a value of $12,200,000. Peru was up nearly 21% to $9,000,000. Central American countries, as a whole, revealed an advance of 5.6%, with Honduras, $6,000,000, Nicaragua, $1,900,000 and Panama, $4,600,000, falling off 2.4%, 32% and 10% respectively. Costa Rica gained 8.4% to $3,300,000 and Guatemala rose 36.1% to $8,400,000. Haiti, with a value of $1,800,000 improved 56.6%; Santo Domingo, at $5,300,000, was 7.6% greater; and Ecuador increased 2.0% to $3,300,000.

Northern North America, with 16% of total imports, revealed a gain of 30.1% to a value of $381,300,000. Canadian shipments to the United States advanced 31.2% to a value of $375,800,000, thus retaining the leading position among all supplying countries. Newfoundland and Labrador declined 23.1% to $4,800,000.

Africa, with 2.1% of total, improved 22.4% to a value of $51,000,000. British West Africa rose 29.5% to $18,000,000; Egypt advanced nearly 15% to $10,200.000; and British South Africa, thanks to activity in the gold fields, expanded substantially by 77.1% to $7,500,000. Receipts from Algeria and Tunisia were down 17.7% to $2,500,000.

Oceania, with a value of $35,800.000, comprised 1.5% of the total and with an advance of 35.4%, displayed the greatest improvement of any of the continents as compared with the preceding year. Shipments from Australia to the United States gained 56.4% and were valued at $22,900,000 while receipts from New Zealand advanced 11.7% to $11,600,000.

FOREIGN TARIFFS AND COMMERCIAL POLICIES

By Henry Chalmers

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THE CURRENT SITUATION

Aside from those countries where normal economic activity has been subordinated to special nationalistic objectives and a determined program of high self-sufficiency and a number of the smaller states economically dependent upon them, the year 1937 in general saw a distinct check to the policy of restriction and diversion of internal trade which had marked the depression years. A few steps in the opposite direction, if moderate ones, were actually taken during the year, and others were foreshadowed.

In the main, the huge and complicated structure of trade barriers and direct governmental interventions in economic life built up in so many countries since 1930 and frequently accompanied by arbitrary and discriminatory trade canalization, still persists. Import duties are still much higher in most countries than they were at the onset of the depression, and in many cases are now accompanied by additional charges under various names. Quota restrictions on the quantities which may be admitted of particular products or from particular countries, or official controls on the allotments of foreign exchange with which to pay for them, or a combination of both of them, continue to dominate the conditions of trading with most of central, southern and eastern Europe, parts of Latin America and of Asia.

The attainment of an annual balance in the trade with each individual country, or a closer approach to such a condition, still seems a directing principle in the trade control measures or agreements of many governments in various parts of the world. On the part of Germany, Italy, Soviet Russia and Japan, a large measure of self-sufficiency in certain basic foodstuffs, raw materials and even industrial equipment, at almost any cost, is among the declared objectives of those governments as part of their special current nationalist programs. On more limited ranges of products, efforts toward greater self-supply figure also in the domestic programs of a number of lesser countries.

MOVES TOWARD GREATER TRADE RESTRICTION

In fact, 1937 was marked by a number of important additional measures restrictive of international trade. Early in the year Japan instituted exchange control on imports, which was applied with increasing strictness, and after the outbreak of the Sino-Japanese conflict added prohibitions on the importation of some products and limitations on the volume of others. Germany further tightened restrictions on imports in aid of its autarchy program, to the point of imposing a high duty on natural rubber with which to finance the domestic production of a synthetic substitute. In the renegotiation of a wide series of trade agreements, Italy insisted in most cases upon bilateral balancing of new trade and an export excess for the liquidation of any frozen credits. Mexico ordered a succession of substantial increases in duties on broad ranges of foreign products.

MOVES TOWARD TRADE BARRIER LIBERALIZATION

On the balance, however, these measures appear to have been more than offset during 1937 by the steps which a wider range of countries have taken toward the relaxation of high and arbitrary trade barriers. While none of the countries that have been operating import quota systems have as yet abolished them entirely, increases in the amounts of goods admitted under quota or even abolition of individual quotas have been more frequent than in preceding

years. In July, Turkey went so far as to abolish all import quota restrictions and revise the tariff downward, although limiting the new regime to the products of countries with which she consistently had an active trade balance, which included the United States. In December, the Australian Government authorized import permits to be granted freely for broad lists of products which had been under restriction from the United States and certain other countries since early in 1936, and promised release of the remaining products as soon as study could be made as to the adequacy of the protection afforded by the existing duties.

Czechoslovakia and Portugal abolished their exchange control on payments for imports during 1937, although the former still maintains an import permit system on many classes of products. The improved market demand and higher prices prevailing for their natural products allowed various Eastern European and Latin American governments to administer their exchange controls with greater flexibility, and with more scope for trading with free-exchange countries.

In import duties, formerly the sole condition of international trading, reductions have been more frequent in many countries during 1937 than increases, contrary to the trend of recent years. While most of these reductions in duties and related charges have taken place in the course of reciprocal agreements between various pairs of governments, not infrequently during the past year have reductions been made autonomously by individual governments; these duty reductions of both types being usually extended to most trading countries.

A particularly noteworthy development of the year was the convention entered into at The Hague, in May, by the seven countries of northwestern Europe known as the Oslo Powers. As a modest beginning in collective action toward the gradual reduction of trade barriers, Belgium-Luxemburg and The Netherlands agreed to lift the quota restrictions on certain distinctive products of the others, and not to impose any fresh barriers upon them, while Denmark, Norway, Sweden, Finland and Netherlands Indies were not to increase the duties or introduce new restrictions with respect to lists of products of the other signatory countries. While the agreement was hopefully left open to adherence by additional like-minded governments ready to assume similar obligations, the benefits of the immediate undertakings were extended by several of the Oslo group to a number of outside treaty countries, including the United States.

Reciprocal exchanges of most-favored-nation treatment, whether alone or in combination with other trade arrangements, were embodied more commonly during 1937 than during recent years, especially in agreements between countries not strictly committed to the bilateral balancing principle. Increasingly, also, has this obligation of equality of competitive opportunity been undertaken with regard to quotas and other forms of import control. Italy and Chile, both of which have been arranging their trade relations with various countries on special bilateral bases, undertook agreements with the United States for an exchange of unconditional most-favored-nation treatment, applying that principle to quota and exchange control as well as to import duties.

What has been widely hailed as perhaps the most important development in years toward the reversal of the trade-restrictive type of policy, was the simultaneous announcement by the United Kingdom and the United States, late in November, that they had agreed upon the bases for a reciprocal trade agreement. The importance naturally attached to the prospect of a trade-liberating agreement between the two countries which are the world's largest traders and leaders also in other respects, was enhanced by the understanding that the existing preferential duties in favor of each other, which had been widely extended among the various parts of the British Empire under the Ottawa Agreements of 1932,

would now be subject to reduction by negotiation.[1] High expectations are widely entertained for these negotiations, not alone for the direct improvement of trade possibilities in these two great markets for the many products of which each had been an important supplier to the other, but also for the impetus such an agreement may give to similar reciprocal arrangements between other countries. Similar negotiations between certain of the British Dominions and the United States are already expected to follow.

ENCOURAGING CONDITIONS AND FORCES

The commercial policy developments of 1937 and the prospects for the period ahead depend largely upon the relative strength of the conditions and forces which have been operating to encourage,—and those to restrict,—this return to freer and more open competitive conditions of international trading. Most important has been the marked—if uneven—economic recovery in almost all countries during the past two years, stimulating a larger volume of both foriegn buying and selling. The resulting improved general position of most countries apparently made governments more able and more readily disposed to follow a more flexible attitude toward imports.

Particularly have the rising needs from the industrial countries for raw materials and foodstuffs increased the demands upon the primary-producing countries and afforded them enlarged outlets and improved prices for their staple export products. Probably for the first time since the depression have the so-called "price scissors" closed, during early 1937, as the relative price level of most primary products rose to that of manufactured products.

In fact, by early 1937, there were evidences of a considerable easement of the principal tensions which, during the early years of the depression, had prompted many governments to resort to greater import barriers and to various special arrangements that have operated to restrict and divert trade. The difficulties and fears arising from the earlier disparities in currency values, with the apprehensions concerning their effect upon relative prices and trade movements; the low prices, particularly for those natural products least capable of prompt adjustment of supplies to reduced demand; and the precarious financial position of many governments, with foreign debts and other obligations staying rigid or increasing at the very time when all sources of income were shrinking—these and various related pressures and problems of the early thirties had been largely removed or were well on their way to correction.

With basic internal conditions thus eased in many countries, there appears to have been a greater readiness to recognize the costliness as well as irksomeness of the various elaborate governmental restrictions and international arrangements which, after all, appeared to have helped them little toward a definite revival of trade or prosperity.

Probably not without effect at this time also, were the bold example of the United States in pressing forward with its program for reciprocal trade-liberating agreements,[2] and the growing consensus of opinion of spokesmen of many governments and of business at various international gatherings on the importance of working toward reduction of trade barriers in so far as financial and other considerations allowed a return to more liberal trade policies.

UNCERTAINTIES AND RESTRICTIVE FORCES

On the other hand, there are a number of situations and attitudes working in the opposite direction or counseling caution even when the improved domestic conditions in a par-

[1] The United Kingdom is dealing also for Newfoundland and the British Colonial Empire.

[2] By the end of 1937, the United States had concluded such agreements with 16 countries (and their colonies), which together accounted for over a third of the total American foreign trade, and all of them were in operation. Six additional agreements are now in various stages of negotiation.

ticular country might warrant a less restrictive control of imports.

Many doubts are expressed as to the stability and soundness of the measure of recovery in domestic activity and international trade that has been attained recently. It is not too clear how long particular countries may continue to be good markets as a whole or for individual commodities. Thus there have been markedly increased importations of grains and other foodstuffs on the part of various countries during the past year, a fact which has contributed substantially to the revived prosperity and improved financial position of certain agricultural countries. These importations were facilitated by reductions or waivers of import duties on such products by at least 10 governments during 1937. However, since this increased foodstuffs trade was due mainly to simultaneous crop shortages in a number of areas, it is bound to be largely transitory.

Even more striking have been the increased volumes of industrial materials and equipment that have been moving in international trade since 1936, stimulated in the case of iron and steel by reductions or suspensions of import duties on the part of a number of governments, notably the United Kingdom, Germany and Japan. However, these increased trade demands and tariff easements are known to have been prompted, in considerable measure, by the exceptional needs of the wide-spreading rearmament programs and auxiliary purposes, as well as for the more normal revival of durable goods industries. In certain cases, they served the self-sufficiency or substitution programs of particular governments. The doubts are therefore understandable as to how long the stimulus of these activities may continue, and whether such heavy expenditures for largely unproductive purposes are not likely to be followed by a slowing down of purchasing power and of international trade.

Somewhat related are the doubts concerning the level of prices for basic commodities that is likely to prevail after the recent subsidence of the exceptional spurt of demand between the summer of 1936 and the middle of 1937. Important factors in the explanation for the recent sharp rise in prices of primary products, and of the subsequent relapse, have been that the heavy stocks accumulated during the early years of the depression had been gradually worked off, and that supplies of most of these commodities are not readily adjustable to the rapid changes in demand and price, especially during a speculative and nervous market.

In the broader financial field, while the exchange relations between the major currencies have, with one notable exception, been maintained with remarkable stability since the Tri-Partite Agreement of September, 1936, any long-time view of the international monetary situation is still obscured by various elements of material uncertainty.

An important restraining influence on the demobilization of "emergency" trade control measures is the fact that the totalitarian states are continuing in their efforts toward more closed national economies with increased energy, and that such imports as are permitted into these countries are arbitrarily controlled as to source and often subject to special compensatory trade arrangements and stringent limitations upon payments. Consequently, various of the other countries standing in close economic dependence upon these states, as markets, hestitate to venture any material relaxation of their own trade control measures. Certain countries are reported to be continuing quota systems largely for their value as bargaining material with those countries operating on the quota basis.

Finally, with the current intermingling of political and economic developments and objectives, the shadows of political uncertainties in various parts of the world cannot but materially influence economic initiatives in many countries.

THE PROSPECT

Despite the contrary influences at work, and some tightening of foreign markets toward the end of the year,

an objective observer of the trends in the commercial policies of the various foreign countries during 1937 and preceding years, in the light of the broader currents of world developments, would appear to be warranted in a moderately encouraging expectation for 1938. If, for a fair stretch ahead, the nations could feel assured of no serious further political disturbances, of substantial stability of currency values, and of measurable recovery from the recent drop in the price of many primary commodities, the readiness that intrinsically improved conditions have developed in a considerable number of countries during the recent period for a progressive relaxation of foreign trade barriers might express itself even more freely in concrete form during the next year or two.

PUBLIC PROTECTION OF INVESTORS

By Francis E. Frothingham

President, Investment Bankers Association of America

THE POSITION OF THE INVESTOR AND THE ISSUER

The investor—he who has accumulated something beyond actual living expenses—is the ultimate source of the funds which support government and industry. As 1938 opened he was called upon to help rescue a recovery that collapsed with disturbing implications in the closing months of 1937. All hands turned to him to produce his surplus earnings and keep the wheels turning. Those who plumbed for causes and cures of the 1937 depression found one answer when their variously phrased conclusions were reduced to the least common denominator. It was: "Get the investor to invest." But in what? The corollary, of course, was: "Get the issuer to issue." In other words the machinery was out of gear. A resumption of the normal functioning of issuer and investor, therefore, involves the nation's welfare, and overshadowing any technical problems of conducting the investment machinery is the first need of getting it started again.

The business pendulum swung through a wide arc during 1937. Late in 1936, James M. Landis, then chairman of the Securities and Exchange Commission said: ". . . our problem is to administer a recovery." His successor might well paraphrase him at the close of 1937: "Our problem is to recover recovery."

On Nov. 15, 1937, the President of the United States said to Congress: "Obviously an immediate task is to try to increase the use of private capital to create employment." As the consequences of the collapse of business became clear by the year-end, as the ranks of the unemployed swelled and distress signals went up all about, the urgent need for the issuer to issue and for the investor to invest became more and more apparent.

THE NEED FOR INVESTMENT CO-OPERATION

The need was expressed in many ways. A Congress of American Industry held in New York early in December under the auspices of the National Association of Manufacturers stated: "Increased flow of capital investment into private enterprise is essential to expand production and employment." It pointed out that one of the "road closed" signs confronting industry was legislation which reduced incentive to invest funds, especially in the durable goods and construction industries. Col. Leonard P. Ayres of the Cleveland Trust Company said: "Recovery depends on the raising of new enterprise capital by private financing, and on the closely related matter of new corporate and private construction." Comptroller Morris S. Tremaine of

New York State said: "We have plenty of labor. We have plenty of opportunity. But we have no co-ordination, and the reason for the lack of co-ordination is undoubtedly the penalty put on the movement of capital from one enterprise to another, or from no occupation to its natural use in making jobs." Chairman Marriner S. Eccles of the Board of Governors of the Federal Reserve System was more specific, citing as one of the "two principal" causes of the "recession," "the failure of building construction, railroad and utility expenditures, to increase sufficiently to offset the decline in the government's contribution to community buying power."

This dominant investor problem of how to win the investor's confidence so that he will make his savings available for enterprise is clearly beyond the direct control of the regulatory agencies of government. When industry slackens and the investor keeps what he has because of his concern about the future, there is need for careful thinking and for turning the pages for forgotten formulae that might again point the way out, or at least illuminate the subject helpfully. One of these formulae, rediscovered in the *Economic Review* of June, 1936, was: "For each dollar of national income there must be a dollar of capital productively employed." Its exact accuracy is not significant. Its opposition of cause and effect is important. "For every dollar's worth of food, fuel, clothing —of all the other things produced and consumed each year—there must be a dollar invested somewhere in a machine, a factory, a power plant, or other piece of productive equipment." To invest that dollar productive activity must see earnings from its use sufficient to pay labor, other operating costs and a balance to justify risks involved and a return —a dependable return—to the investor who gave the dollar. In our economy it is the heavy industries so-called that chiefly sustain business prosperity and employ labor. These, primarily, therefore, need the confidence of outlook to use that dollar, and to leaven the business mass by so doing.

THE INDUSTRIAL PROBLEM

An important source to which economists turn for the facts about the needs of the heavy industries is a survey by the Brookings Institution, the results of which were made public in 1937. That research organization, impartial and independently objective, resolved the generalities about the neglect of our national physical equipment into dollars and cents. It concluded that the shortcomings, the ravages of the famine year, amounted to some $27,000,000,000. The Institution found $11,000,000,000 deficiency in the industrial plants of the country, $2,300,000,000 in the railroads. The public utilities were found to need 70 per cent more expenditures for equipment in each year of a five-year period if they are not to fall behind the demand for power. When it talked of going beyond the matter of mere repairs for the depression hangover and contemplated needs to bring the country's physical equipment back to a point where each individual could be supplied with goods as he was in 1929, the Institution talks in terms of $33,000,000,000 annual expenditures for a five-year period. That would indicate 50 to 60 per cent increase over outlays of recent years. Such figures and their background are startling and disturbing.

The urgency of getting the wheels of industry turning again was never more acute. One of the great problems was how to help the investor to help the nation. The regulatory bodies had started to do some things that were within their province. The Securities and Exchange Commission said to the securities dealers of the country: "We want to co-operate." As one Commissioner phrased it: "Co-operation is your interest, our need." The Securities Commissions of the States said: "We want to denude our procedure of superfluities that impede the ready transit of securities back and forth across our state lines." But such considerations seemed tragically academic in the

critical atmosphere at the close of 1937 when for periods of months one alert clerk could have supervised all the new capital financing undertaken without working overtime.

PUBLIC POLICY

The larger problem was carried directly to Congress. On Dec. 20, Senator Josiah W. Bailey of North Carolina told Congress that the time had come when liberal investment of private savings in enterprise must be heartily encouraged by the public policy. Dramatically he posed the issue: "I am pleading for a public policy that will encourage investment and enterprise on the part of the people in America who have money in the banks—not the great, big, rich people; there are not enough of them; it is the great masses of men who save their money here. . . . Congress is the policy-forming department of the Government. We can frame the policy. The President is calling upon us to create an atmosphere favorable to the investment of funds in private enterprise. . . . This follows right down the line he indicated when he said that it is our obvious task to induce the investment of private funds in enterprise and industry. . . . I am saying that when we get through this transition we are going to get through it on the basis of encouraging the investment of private savings in enterprise."

Senator Bailey added: "Another thing: If we do not get through, I am going to tell you where we are going. We cannot have any halfway measures about this matter. Either we are going to succeed in employing and taking care of the whole American system, its standard of living and its people, its farm prices and its welfare, on the basis of private enterprise, or we are going inevitably into collectivism. There is no halfway ground. . . . If this depression goes on, if it is prolonged in its present terms, and the army of the unemployed continues to increase, and business and industry do not respond, and commodity values, farmers' prices of cotton and other things they produce go down and down, an atmosphere will be created in the land which will demand collectivism." He might well have said: "If business and industry is given no incentive to respond," the catastrophe would fall. In this atmosphere the curtain fell on 1937. The year 1938 must bring forth either improvement or tragedy.

S.E.C. AND THE N. Y. STOCK EXCHANGE

Overshadowed as its duties were, the Securities and Exchange Commission addressed itself to straightening out kinks in the new mechanism as they were disclosed in its first real test in foul weather.

Thin markets on the securities exchanges became a concern to all hands long before the crash of stock prices in the latter months of 1937. Charles R. Gay, president of the New York Stock Exchange, drew official attention to its inherent dangers in his annual report in August. People in finance tended to lay responsibilities on the S.E.C. regulations on exchange transactions, declaring that they barred the big operators who serve the public by cushioning the markets at the troughs and peaks. The Commission was disinclined to accept this interpretation without further finding of fact. Both the Commission and the New York Stock Exchange set about establishing the facts upon which decision could ultimately rest. The Exchange started its search for facts by calling into being a committee to provide a factual background against which the Securities and Exchange Commission and the Exchange may iron out their differences. On the committee, which was engaged in this mission when 1937 ended, were three members of the Exchange, two representatives of the public—one the president of a publishing company and the other a teacher of law and finance—two heads of manufacturing concerns whose shares are listed on the Exchange, and two former presidents of the Investment Bankers Association of America.

The interest of the investor in the outcome of this stock exchange in-

vestigation is very real whether or not he is one who places his surplus funds in semi-permanent employment through securities purchased through the investment banker, or is one who buys and sells on the exchange.

Availability of the money invested in securities is one of the requirements of the investor. The user of capital, who is the issuer of securities, on the other hand, cannot build plants with money which he may be required to return upon sudden notice. The exchanges—and the equivalent over-the-counter market for securities not listed on exchanges—enables the reconciliation of these opposite needs of investor and issuer. The latter is enabled to obtain funds for a definite term of years or in perpetuity in the case of stock issues. The investor, while accommodating the issuer on this definite-term basis, retains the opportunity to convert his securities into cash through the ability of quick sale to some other investor. All this only emphasizes the need of an early and happy adjustment of the questions at issue between the Stock Exchange and the S.E.C.

REGULATORY MEASURES

There was no new Federal legislation on securities in 1937. Skeleton regulations dealing strictly with fraudulent and manipulative practices in the over-the-counter markets were promulgated by the Commission under authority of an amendment to the securities acts passed earlier. There were, however, legislative proposals intended to place reorganizations and protective committees under the jurisdiction of the Securities and Exchange Commission and also to give the Commission supervision of trustees and of trust indentures under which corporate securities are issued. Investment bankers were sympathetic to the objectives of these proposed measures but raised questions before the Congressional committees deliberating the subjects, as to the principle of control which the regulations established under the specific bills would have introduced. It was the belief that in these bills the "full-disclosure" theory of regulation, which is the background of the present Securities Exchange Commission laws and which has general approval, was supplanted by a "commission-approval" theory which imposed upon the Commission an obligation to pass upon the business merits of the questions involved. The Securities Act is very sound on this point. It makes it a criminal offense to represent that the Securities and Exchange Commission has passed upon the merits of security issues registered for public sale under its provisions. Nevertheless, the mistaken impression that the Government is in some way sponsoring securities offered is rather widespread already, and it seems as though the assumption by government of responsibility through its approval of matters arising under these newer bills, despite the disclaimer that the laws require, could only prejudice all actions under them most unfortunately, to the greater confusion of the public and to the breakdown of the direct responsibilities that are unavoidably assumed by private interests under the "full-disclosure" principle.

The Securities Commissions of the state governments addressed their attention during 1937 to a modernization program for their blue-sky laws stressing particularly the co-ordination of activities among the agencies set up by the individual States. These regulatory authorities, through their national organization, the National Association of Securities Commissioners, tackled the problem of eliminating needless costs in money, time and energy in preparing statements of identical facts in a multiplicity of forms to portray the same picture. A graphic picture of what simplification in forms and registration requirements can amount to was presented to the state commissioners by Warren W. Martin, Assistant Attorney-General of Indiana. Mr. Martin disclosed that the registration of an issue under the securities laws of 12 States, also under the Federal Securities Act of 1933, would require the furnishing of a total of 733 items

of information. After eliminating 184 of these which are required for the S.E.C.'s Form A-2, there are 549 items which, he said, include 314 that duplicate or are similar to the 184 required by the Federal forms. The remaining 235 items of information requested in the 12 state forms concern information not requested in the A-2 form.

"You can appreciate how confusing it is when an issuer seeks to qualify the registration of an issue in a number of states," he said. "It would be a hard matter to find any law firm that would be familiar with the laws and application forms used in a large number of states, and to force the issuer to employ counsel in the respective states to get up these applications consumes a great amount of time and is very expensive to the issuer."

Of the 47 States having a securities law in one or another form, 36 require the filing with a state official of some information in writing before non-exempted securities may be sold in that State. In the majority of laws the state official is given the power to prescribe forms and appropriate rules and regulations. Probably such power is inherent in each of the others. This situation opened the door through which co-ordination is proceeding. The Commissioners are using the ready expedient of a simple registration form, carrying the high-point essential respecting the issuer and the security. Additional information would then be supplied through exhibits. In the case of a security registered with the Securities and Exchange Commission, the short form, plus a copy of the registration statement filed with the S.E.C., would suffice.

A committee of the National Association of Securities Commissioners that devised this solution for the troublesome complexity of registration forms is currently engaged in refining the new application blanks which in due course will be transmitted to the several State Commissioners, backed by the recommendation of their own national association that they be adopted.

CREDIT FACTORS

The briefest mention may be made of the regulatory efforts of the Federal Reserve System and of the Treasury Department during 1937. Easy money has been maintained, partly as an inducement to commercial borrowing but primarily to maintain the credit background for government financing. These low rates were, of course, a very direct cause of the heights to which so-called money-market types of securities had moved by early 1937 as a result of institutional buying. An important factor also in the mal-adjustment of corporate issues in the investment market, so that secondary issues and equities fell into disfavor, was aggravated by the distortion of normal investment demand as the result of new, heavy and complicated taxation.

Moves to restrict credit supplies were aimed at the excess of bank reserves. Preliminary moves in 1936 had accomplished something in this direction. Banks had been required to carry 50 per cent larger balances with the Federal Reserve Banks, and the Treasury had started to sterilize new gold imports so that they did not augment the embarrassing bulk of unused credit resources. In January, 1937, the Federal Reserve authorities ordered an additional 33⅓ per cent increase in reserves required of member banks. There was some unloading of government securities by the banks which seemed glad to reduce investments of this character whenever an opportunity was presented to replace a block of government bonds with a loan to business. Upon indication that pressure was being exerted upon the market for the Government's obligations, the Federal Reserve Banks stepped into the market as buyers as early as April, 1937. But when, by late summer, the slump in securities prices became a rout, rediscount rates at the Federal Reserve Banks were cut as an invitation for the commercial banks to borrow at the Federal Reserve Banks rather than to regurgitate additional government securities. The Federal Reserve Banks again stepped

into the market as buyers of government bonds and at the suggestion of the Federal Reserve authorities, the Treasury released $300,000,000 of the gold previously sterilized in order that some of the excess might be put back into reserves. Finally on Nov. 1, margin requirements on collateral loans were reduced, while, for the first time, brokers were required to demand substantial margins of those who wished to sell securities short.

CONCLUSION

A brief resumé of this sort must inevitably be inadequate. Each item touched upon deserves a long and careful analysis, but perhaps enough has been said to indicate the quality of the problems pressing on every business activity as 1938 opened. The constant application of palliative moves both in money matters and otherwise, the competitive threats of government with its citizens, the continuing government spending, the uncertainties confronting business generally, point to the need above all others, if the industrial machinery is to move again as it should and can, that the confidence of the investor be again regained so that there will be a flow of funds into productive enterprise. This does not in the slightest mean that improper business practices should not be fully and adequately punished. That is generally wanted; but that is not inconsistent with an atmosphere of confidence and reasonable assurance of outlook, which, it may be repeated, alone can attract the surplus earnings of the investor to profitable use. Surely a conciliatory attitude on the part of everybody can accomplish desirable results.

LIFE INSURANCE

By Wendell M. Strong

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GENERAL

The year 1937 showed, in general, the same trends as the two preceding years. New insurance, total insurance in force and assets increased. Terminations by lapse or surrender decreased, although to a lesser extent than in the previous year. The demand for policy loans decreased. Mortality experience was somewhat more favorable. Adverse conditions in regard to investments continued.

The severe business "recession" which began in the latter part of the summer has had considerable effect on the business of life insurance companies. The extent to which this recession has affected current trends is not available at the time this is written.

An important event of the year was the publication by the New York State Insurance Department of a proposed new statutory code of insurance laws embodying radical and even revolutionary changes in the existing law. Further reference is made to this matter later in this article.

ASSETS

The total admitted assets at the end of 1936 showed a substantial increase over the previous year. A considerable part of this increase was due to the sale of single premium policies and annuities. Such contracts, in view of the prevailing low interest rates and the dearth of suitable investments, increase the investment problems of the companies. During 1937, notwithstanding a tendency to limit the amounts of single premium policies and annuities, assets have continued to increase. No figures are as yet available.

NEW BUSINESS AND INSURANCE IN FORCE

The total amount of new insurance issued in 1936 (Ordinary, Industrial, and Group combined) was almost exactly the same as in 1935.

In 1937 there will probably be, except for industrial insurance, an increase, the bulk of which, however, will be in group insurance which, it is estimated, will show an increase of over 30 per cent as compared with a decrease in the previous year. The increased new business trend has been interrupted by the unfavorable business conditions which developed in the latter part of the year.

Total insurance in force at the end of 1937 may exceed $110,000,000,000, a new high record. The decreases of the depression years have thus now been recovered. This is due as much,

NEW INSURANCE

(Association of Life Insurance Presidents)

(40 companies having 82% of insurance in force in all U. S. Companies on Dec. 31, 1936)

(Dollars in millions. First eleven months of each year)

	1935	1936	Per Cent Increase	1937	Per Cent Increase
Ordinary Insurance	$5,061	$4,859	−4.0%	$5,128	5.5%
Industrial Insurance	2,333	2,479	6.2%	2,426	−2.1%
Group Insurance	591	504	−14.6%	674	33.6%
Total Insurance	$7,985	$7,842	−1.8%	$8,228	4.9%

NOTE.—This table is only for the purpose of showing the tendency, so far as it is known, in 1937. It corresponds only roughly with results for all insurance in all companies in previous completed years.

AMOUNT OF INSURANCE—ASSETS—INCOME—DISBURSEMENTS

(Including Ordinary, Industrial, and Group Business)

(*Insurance Year Book.* Dollars in millions)

All United States Companies

Year	Number of Companies	New Business	Amount in Force (End of Year)	Admitted Assets (End of Year)	Surplus* (End of Year)	Total Income	Total Disbursements
1936.	315	$14,335	$104,667	$24,874	$2,009	$5,180	$3,518
1935.	340	14,139	100,730	23,216	1,768	5,072	3,593
1934.	313	14,280	98,542	21,844	1,823	4,786	3,662
1933.	318	13,787	97,985	20,896	1,827	4,622	3,917
1932.	328	14,514	100,154	20,754	1,944	4,653	3,998
1931.	342	17,226	108,886	20,160	1,858	4,850	3,538

* Includes amount set apart for dividends to policyholders during following year.

ORDINARY INSURANCE

	1936	1935	1934	1933
Number of companies	$ 250	$ 275	$ 248	$ 252
Amount terminated by death	707	675	685	698
Amount terminated by surrender and lapse	4,046	5,094	6,138	8,211
Total amount terminated	$6,106	$7,426	$8,868	$11,420

if not more, to reduced surrenders and lapses as to increased new business.

INVESTMENTS

The investment situation has continued as in the immediately preceding years to be the most serious problem confronting the companies. The normal increase in assets together with funds derived from maturing investments and from the calling of high rate bonds for purposes of refinancing at current low rates, have resulted in abnormally large amounts of insurance funds seeking investment. The supply of suitable and available investments is entirely inadequate and such investments as can be made are at exceedingly low interest rates. A large proportion of the investments being made are in short term securities, particularly Federal Government bonds which yield a very low return.

Railroad bonds have shown increasing defaults and, inasmuch as the companies have considerable investments in such bonds, most of them dating from the time when such bonds seemed the best sort of security, there have been appreciable losses. In other bonds the results have been more favorable.

In mortgage loans there have been many foreclosures in past years, differing greatly in proportionate amounts in the different companies. In 1937 the situation, however, undoubtedly improved. The supply is increasing and the number of defaults decreasing while the rate of interest obtainable is better than on other forms of investment.

The natural result of the conditions referred to has been a general fall in the net rate of interest realized, and it seems likely that this will continue. In a few cases companies have been able to show improved interest earnings because of collections of arrears of overdue interest or dividends, but the general trend is downward.

POLICY LOANS

The tendency of policy loans to decrease continued through the year 1936 and has presumably continued during the greater part of 1937. However, with the depression at the end of 1937 a reversal of this tendency may be expected.

The low interest rates prevalent on investments and on other forms of loans generally, have resulted in some agitation for a reduction in the rate of interest on policy loans which is normally 6 per cent. There is a good deal of misunderstanding in regard to this rate which is not, in fact, excessive. The rate is fixed at the time of issue of the policy and applies during the entire duration of the contract so that the companies are obliged to loan—usually on demand—at the contract rate irrespective of any other considerations. The average policy loan is not more than a few hundred dollars and the amount of interest payable on thousands of loans is actually less than one dollar. Many of these small loans are made at an actual loss to the policyholders generally because of the high rate of expense involved. In addition, the loan privilege prevents the companies from investing as advantageously as they otherwise could, since, at a time when money is tight and good bonds to yield a high rate are available, the companies' funds available for investment are greatly reduced because of the increase in policy loans at such times. Again, when outside interest rates are low, as they have been for several years, more policy loans are paid off, throwing money into the hands of the companies to be invested at a most disadvantageous time.

In December, 1937 the Superintendent of Insurance of the State of New York submitted a prosposed amendment to the law. Under this proposal the rate of interest to be charged on loans under contracts issued in the future would be variable and would be fixed annually by the Superintendent on the basis of the current yield on certain types of bonds with an allowance for expense and subject to a minimum rate of 4½ per cent and a maximum rate of 6 per cent. This plan would cause substantial loss of income to the general body of policyholders, would

increase the expense of handling loans, and would involve serious practical difficulties. The plan applies only to New York State policies. This might easily occasion difficulty for the companies with other States.

SURRENDERS AND LOANS

(New York Insurance Report)

(Companies Reporting to the State of New York. Dollars in millions)

Year	Number of Companies	Amount in Force (End of Year)	Amount of Policies Surrendered*	Amount of Policies Lapsed*	Paid for Surrendered Policies	Policy Loans (End of Year)
1936	56	$71,620	$1,447	$1,443	$ 622	$2,869
1935	51	69,350	1,966	1,740	772	2,989
1934	53	68,135	2,624	1,896	924	3,096
1933	53	68,177	3,624	2,551	1,177	3,191
1932	53	71,478	3,556	3,292	1,137	3,188
1931	52	74,636	2,264	2,934	718	2,798

* Includes group insurance but not industrial.

DIVIDENDS

Dividends paid in 1937 were not greatly different in aggregate amount from those of 1936. There were some increases and some decreases in dividend scales but on the whole little change in so far as the total amount distributed is concerned. The great majority of companies have already decided to continue in the main in 1938 the same dividend scale as in 1937.

Dividends on individual policies are affected by changes in the incidence of surplus earnings. The fall in the interest rate resulting in lower rates and amounts of "excess interest," usually one of the most important factors in the dividend, means that, in general, policies with relatively high reserves, such as endowment or single premium policies or policies of long duration, should get smaller dividends except to the extent that reduced interest is offset by increased surplus earnings from other sources.

The dividends on Supplementary Contracts (*i.e.* contracts issued to beneficiaries under the various forms of optional settlements) consist entirely of interest earned in excess of the guaranteed rate, which is usually 3 per cent but in some cases 3½ per cent. Such dividends have, therefore, been very substantially reduced in practically all companies and will probably have to be still further reduced in 1938. In fact, in some cases no excess interest is now being paid on such contracts, the company allowing only the guaranteed rate.

The other principal sources of surplus, namely, the saving from the expense margin in the premium and favorable mortality experience, are of more importance relatively in the case of policies a short time in force or low premium policies on which the reserve is small. The surplus from the beginning remains a fairly constant quantity in relation to the amount of the insurance in force. Surplus from favorable mortality has in general shown an increase which to some extent has offset reduced interest earnings.

MORTALITY AND DISABILITY

The indications are that the favorable mortality of 1936 has continued for 1937 and that the adverse experience under the provision for disability income benefits has continued with possibly slight improvement. This last is of decreasing importance since practically all companies ceased or practically ceased writing policies with such provisions six years ago so that the amount in force has decreased and will continue to decrease year by year.

PAYMENTS TO POLICYHOLDERS—INTEREST RATE

(Including Ordinary, Industrial, and Group Business)

(*Insurance Year Book.* Dollars in millions)

Year	All United States Companies						100 Companies
	Number of Companies	Premiums Received	Dividends Paid	Death Losses Paid	Surrenders and Lapses	Total Payments to Policyholders	Rate of Interest on Mean Invested Funds
1936.....	315	$3,683	$418	$919	$ 713	$2,429	4.49 %
1935.....	340	3,692	424	877	883	2,535	4.47
1934.....	313	3,521	438	875	1,078	2,705	4.68
1933.....	318	3,322	499	877	1,357	3,016	4.75
1932.....	328	3,504	563	905	1,346	3,087	5.08
1931.....	342	3,661	585	915	861	2,607	5.23

GROUP INSURANCE

The amount issued in the first 11 months of 1937 was approximately an increase of one-third over the year 1936. In 1936, which showed a decrease from the previous year, it seemed as if the Social Security Act had discouraged this kind of insurance. The great increase in 1937 indicates the contrary.

One of the largest companies writing Group Insurance has recently announced an important liberalization of its contracts. This relates to the extent of insurance coverage on employees terminating service on account of disability. Under the new contracts the insurance coverage may be continued (under certain conditions) for a longer period than before and irrespective of the continuation in force of the master policy.

INDUSTRIAL INSURANCE

It is significant that, while the first five months of the year showed a slight increase in the amount issued, each of the succeeding six months showed a decrease, the whole being a decrease for the year.

As in the case of Group Insurance there is a marked trend toward increased liberality in the terms of industrial contracts. This is made possible by increasingly favorable mortality experience and by the adoption of various methods for reducing the necessarily high rate of expense. An important development in 1937 was the adoption by one large company of new policy forms which include a copy of the application. The usual methods of reproducing the application in ordinary contracts were formerly impracticable for industrial policies because of the expense involved. The new process makes it possible to eliminate the "sound health" provision, previously an invariable part of the industrial contract and one which was a frequent source of difficulty.

FRATERNAL INSURANCE

While the amount issued in 1936 was greater than for any of the three preceding years, the amount in force at the end of the year was slightly less than at the end of 1935. Thus there has been a decrease for the amount in force for ten successive years, the amount at the end of 1936 being less than two-thirds of what it was ten years previously.

INDUSTRIAL INSURANCE

(All U. S. Industrial Companies)

(*Insurance Year Book.* Dollars in millions)

Year	Number of Companies	Number of Policies (in millions)	New Business	Amount in Force (End of Year)	Amount Terminated by Death	Amount Terminated by Surrender and Lapse	Total Amount Terminated
1936.....	65	87	$4,854	$19,464	$160	$3,040	$3,689
1935.....	65	84	4,722	18,298	154	3,479	4,086
1934.....	65	83	4,885	17,651	154	4,111	4,428
1933.....	66	82	4,673	17,154	149	4,515	4,797
1932.....	68	83	4,793	17,265	154	5,450	5,811
1931.....	68	88	4,847	18,274	159	4,412	4,781

FRATERNAL INSURANCE

(All U. S. Fraternal Orders Showing Figures)

(*Insurance Year Book.* Dollars in millions)

Year	Number of Orders	New Business	Amount in Force (End of Year)	Assets (End of Year)	Total Income	Total Disbursements	Net Amount Received from Members	Paid for Claims
1936.....	249	$586	$6,164	$1,039	$212	$167	$150	$116
1935.....	266	563	6,183	994	205	159	152	111
1934.....	262	524	6,300	961	198	157	150	115
1933.....	206	502	6,395	906	193	156	152	111
1932.....	226	600	7,123	882	212	167	164	117
1931.....	242	671	7,301	895	236	207	185	132

PROPOSED NEW YORK INSURANCE LAW

The publication of the tentative draft of the proposed revision of the Insurance Law of New York was, perhaps, the most important event of the year in regard to life insurance. It was understood that this was to be a recodification of the existing insurance laws with clarification where necessary but without substantial change in the existing statutes. As the Superintendent pointed out, the insurance law has been subject to additions and modifications for a period of 75 years and has not been revised or codified during that period. When the draft of the proposed code was given out it was found to be a volume of nearly 500 large and closely printed pages containing changes in the law, some of which might be described as revolutionary. The companies believe that many of the changes proposed would be very detrimental to the business of life insurance. The following are illustrations of the many objections which are, and will be, raised in legislative hearings:

A provision of the proposed revision would require all companies doing business in New York to conform with many of the requirements of the revision, not only in regard to policies issued in the State of New York but in regard to the general conduct of their business everywhere. If other States took similar action and imposed different requirements it would be virtually impossible, because of the conflict of laws, for companies to transact business in the various States. Again, other States

might, as a result of the apparent attempt of New York to control the business of companies of such States, introduce retaliatory action that would affect New York companies only and perhaps prevent their doing business in those States. In many States statutes already exist under which the authorities can make such retaliation.

There are introduced regulations and restrictions in regard to matters heretofore recognized as entirely within the scope of the companies' discretion. Two examples of this are, first, the requirement that all annuity contracts issued by mutual (and certain classes of stock) companies must be on a participating basis which is contrary to the prevailing practice; and second the prescribing of the method of apportioning surplus (calculation of dividends). This latter would be a fruitful source of disputes and litigation, and is a matter which heretofore has been determined entirely by the directors under the general requirement that the apportionment shall be equitable.

The language of most of the present statutes has stood unchanged for many years and in many respects has been involved in court decisions so that its meaning is well settled. Changes would introduce doubt and it would be years before a similar state of certainty could be obtained, and there would follow all the attendant detriments of uncertainty. Thus it is considered that unnecessary changes should be avoided, which is something the proposed revision does not do.

In many cases the revision attempts to state rules and regulations as applying to all kinds of insurance. Since there are fundamental differences in the kinds of insurance, particularly as between life insurance, property insurance, and casualty insurance, this makes for uncertainty and ambiguity.

FIRE INSURANCE

By Edward R. Hardy

Secretary-Treasurer, Insurance Institute of America, Inc.

FIRE WASTE

The term "fire waste" is used to denote the value, as nearly as it can be estimated, of the property destroyed by fire during a given period, usually a calendar year. It differs from the insurance loss, because not all property destroyed by fire is insured, but it is the best measure there is of the values destroyed by fire. The National Board of Fire Underwriters collects the statistics of fire waste and publishes them month by month. The record for the past three years is as follows: 1935, $259,000,000; 1936, $293,000,000; 1937, $284,000,000. While this shows some variation year by year the fluctuation is not wide enough to cause apprehension.

The *Journal of Commerce* segregates from the daily records of fires those which are estimated as causing a loss of $10,000 or more; for instance, for the month of December, 1937 there were 296 such fires. It should be understood that these are estimates made at the time of the fire and would naturally be subject to changes due to more carefully compiled statistics worked out some time after the event. They do, however, furnish a fair index to the severity of fires.

The insurance record of the past five years, so far as losses which must be paid by insurance are concerned, has been so phenomenal that it has defied all methods of analysis used to ascertain the causes. It has been stated, and with truth, that the losses due to fire for the past five years have run so uniformly even and low that any company taking reasonable care as to the spread of its risks could have made money. It has also been stated that after all the possible reasons have been given to account

for this low loss record for the past five years, there still appears to be an unknown factor that enters into the problem.

Basically, however, there is one outstanding factor which has played a definite part in the matter and that is the tendency of merchants to understock their stores. The uncertainties prevalent in the business world have influenced the merchant to keep his stocks reasonably low; hence, when fire occurs, the losses are on the average lower than they would have been under normal conditions. It is a curious fact that the number of fire alarms sent in throughout the country have increased rather than decreased, so that the low loss record is not due to fewer fires, but to less severe ones. Whatever the reason, however, the fact remains that very comfortably low loss ratios have been the good fortune of the fire insurance companies during the past five years.

FIRE PREMIUMS

For the stock companies the fire premiums for 1937 will approximate $470,000,000, this being an increase of about $10,000,000 over 1936. For the mutuals, the records of which are not exactly comparable, the premiums amount to about $125,000,000, as compared with $120,000,000 for the previous year. The loss ratio for the stock companies was approximately 40% which is about the average for the past five years, and the same is approximately true of the mutuals. By and large, the losses of the mutual companies, excepting the factory mutuals and the local farm mutuals, approximate those of the stock companies, but their expenses are lower.

ACCESSORY LINES

No complete picture of the stock companies can omit reference to the important volume of premiums which come from what are known as "accessory lines." These lines are: Motor Vehicle, Ocean Marine, Tornado, Inland Navigation, Aircraft, Earthquake, Sprinkler Leakage, Hail, Riot, Civil Commotion and Explosion, Rain and Flood, Water Damage, Frost and Freeze and Miscellaneous. The premiums of these amounted to about $300,000,000 as compared with $290,000,000 for the previous year. It should be pointed out, however, that $180,000,000 of this total came from the Motor Vehicle line and is properly chargeable to premiums from automobile insurance in making up a total for that class of insurance. The fire companies can write those forms of loss to which an automobile is subject or gives rise, except those arising from legal liability which is really the big premium producer in automobile insurance.

Taking the figures of the accessory lines together with the straight fire line, the whole produces a loss ratio of just about 40% which leaves a comfortable working margin. It might be pointed out that nearly all of the stock companies—certainly the larger ones—write marine insurance and, while the severe loss on the *President Hoover* the share of which in the United States was approximately $2,750,000 will not appear in the losses for 1937, it will have quite an effect on the loss ratios of marine insurance for 1938.

TRENDS

There are two important trends in the business of fire insurance that are probably of more importance than the bare statistics. The first is the tendency, after the extremely favorable loss experience of five years, to reduce the fire insurance rates, voluntarily to a certain extent and also at the direct request of the state insurance authorities. This is a trend which, if the low loss ratios continue, will be accentuated from year to year. There would appear to be a tendency on the part of state officials to have the rates reflect as closely as possible the loss experience. The assumption that the five-year period was a fair criterion, if it was once established generally, would mean that the rates charged in 1938 would be a reflection of the experience of the five-year period ended with 1937. It is evident that, due to a conflagration, the experience might be adverse and thus call for an increase in rate. That would be difficult to get, however,

because the state officials would be apt to claim that that was an unusual event and that the rate should be based, not on a severe loss of one year, but on the average for many years. For instance, in a certain territory the loss on churches for the past five years has been extremely low, but going back ten years or even six or seven, a loss ratio of 50% is what the figures show. However, the trend is the major point to be emphasized and the trend of the fire insurance rate is definitely downward.

The second trend is the extension of forms of insurance which cover the losses due to causes other than fire. This extension first took the form of the Supplemental Contract, but a recent revision, made in order to have the matter universal throughout the United States, is known as the Extended Coverage Endorsement. This endorsement is added to the fire policy and is precisely what it says, an extended coverage. By being in the form of an endorsement, it becomes a part of the fire contract which is preferable to having it a supplemental, that is, an independent, contract. The forms of loss against which protection is provided by this endorsement are: windstorm, cyclone, tornado and hail, explosion, riot, riot attending a strike, aircraft, smoke, and vehicles. Insurance covering each of these can be purchased separately if the insured so chooses; for instance, coverage against windstorm may be purchased and all the other forms of loss provided in the endorsement may be omitted. As a matter of fact, purchase of protection against each peril was the method by which these various protective endorsements were developed. The experience of many years has shown the underwriter that he can combine all of these in one endorsement and thus furnish the insured for a comparatively modest sum protection against all of these in addition to the protection against fire.

This is a trend which will become more marked in the future. Due to the fact that each State has the power to control insurance, certain adaptations may have to be made for certain States, but by and large this endorsement can be used throughout the United States. The business of insurance is wise to develop these broader covers. By so doing, it will be able to extend additional protection to the insured for a reasonable sum and at the same time to increase its own strength.

MARINE INSURANCE

By Douglas F. Cox

Appleton & Cox, Inc., New York

PREMIUMS WRITTEN AND LOSSES PAID

The figures for 1937 not having been published before the close of the year, it is, as usual, only possible to examine the figures of the preceding year 1936. The Ocean Marine premiums in that year totalled $34,299,000, which is to be compared with $33,288,000 in 1935. At the peak in 1929 the figure was $48,255,000 and at the low point in 1932 it was $29,723,000. The losses paid on this class in 1936 amounted to $19,431,000, which is 56.65 per cent of the premium. In 1935 the Loss Ratio was 55.90 per cent.

In Inland Marine the premium written was $38,069,000, a considerable increase over the figure for 1935, which was $33,524,000, but still far below the peak of $45,844,000 in 1929. There has been a steady increase each year from the low point of $28,139,000 in 1933. The Loss Ratio was somewhat higher, being 41.33 per cent in 1936 as compared with 39.57 per cent in 1935.

While it is impossible to forecast with any accuracy the probable re-

sults in 1937, it seems possible that the total premium written will prove to be somewhat larger than in 1936 in both classes, but in the Ocean class the Loss Ratio will possibly be higher as there have been numerous important losses throughout the year.

STEAMER PRESIDENT HOOVER

This disaster seems likely to be the most costly one of the year to the American market. In December, while on a voyage from Japan to Manila with a large list of passengers, as well as cargo, the ship went on the rocks near the island of Formosa off the coast of China and at the present writing it seems probable that she will be a total loss although the passengers, after considerable hardship and exposure, were transferred to other vessels. She was one of two fine vessels which were built a few years ago for the well-known Dollar Line of San Francisco which maintains a round-the-world service under the American flag. It is understood that the *President Hoover* cost to build something in the neighborhood of $8,000,000. The total amount of the insurance on her hull is not publicly known, but the American Syndicate insuring hulls carries $2,500,000 and there is probably $3,000,000 more carried by companies outside the Syndicate and by the foreign markets. In addition to this, there is the insurance on the cargo, the value of which is unknown at present. Even if the Japanese salvors who are at work on her should be successful in floating her, the cost of salving and repairs will reach very large figures.

HULL BUSINESS

Syndicate "C." of the American Marine Insurance Syndicates, continues to write the bulk of the insurance placed in this country on the hulls of American ocean-going vessels, the remainder of the value of such vessels being placed in domestic and foreign admitted companies outside the Syndicate and in the London market. The results of its underwriting, although fairly satisfactory over the whole period of its existence since 1920, have not been so good recently because of the frequency of important losses, the rising cost of repairs, and the reductions in rates offered by foreign markets. The capacity of the Syndicate is $2,500,000, and its membership consists of American companies and the branch offices of foreign companies admitted to do business here under the State laws. The Federal Government, acting through the United States Maritime Commission, is much interested in expanding the American market so that a larger share of the insurance on modern, high-valued American vessels may be placed in this market. It is possible that the capacity of the Syndicate may be enlarged in an endeavor to meet the Government's wishes in this respect by the addition to its membership of companies which hitherto have not been interested in the business although the door has always been open, and by present members increasing their lines.

COST OF REPAIRS

Increases in the rates of wages paid to shipyard workers and in the cost of materials have resulted in an increase in recent years in the charges made by shipyards for repairing damages to vessels, as well as for building, calculated by some experts at as high as 60 per cent. This means that the underwriters must pay $160,000 for the repairing of damage to a vessel, which only a short time ago would have cost them only $100,000. As the rates of premiums have hitherto been calculated with the expectation of getting repairs done on the lower basis of cost, it is self-evident that the rates of premium must be substantially increased. This is now being generally done, although underwriters are making it as easy for the shipowners as possible.

LONDON MARKET

For several years the underwriters in London were without leadership or co-operation and the resulting

demoralization was so great that a year ago the rates freely quoted there were quite generally far too low to give the underwriters any chance of profit. However, there has been a considerable increase in activity in shipping and consequently the British shipyards have been much more busy with building and repairing. Principally for this reason the cost of repairs has increased in Britain to practically the same extent as it has in this country and, faced with this situation, the London underwriters in the summer of 1937 succeeded in persuading themselves and each other formally to agree to certain principles which will result in raising the rates on British vessels to a somewhat more adequate level. This movement has an effect on the market in London for insurance on American vessels also and this is helpful to American underwriters in their endeavor to obtain the necessary increases without losing all of the business to their competitors in London. The rates here did not go as low as they did in London, and it is probable that they will not now go as high.

"BUILDERS' RISKS"

This class might perhaps better be called "Building Risks" as the insurance covers the prospective owners (as well as the builder) to whatever extent he may have paid the builder during the period of construction, but the former term is more generally used. There has not been much building of ships in this country in recent years but the large program of building for the Navy has brought the subject very much to the fore. The Government naturally prefers insurance in the American market on vessels building in commercial yards. It carries no insurance on vessels built in Naval yards. The cover includes the risks of launching and trial trips and until the vessels are delivered to the Government. The values involved in some of the Naval vessels is enormous and consequently the companies, at the request of the Government, have created a special Syndicate for Naval Builders' Risks with a capacity of $6,000,000 and it now has a moderate amount of insurance on its books, although the general building program has not yet gotten under way. The principal reason why it was possible to create for this purpose a Syndicate of so much larger capacity than that of Syndicate "C," is that Naval vessels are built of so much more fireproof materials than commercial passenger vessels that the companies generally feel that Naval vessels are better risks.

CARGO BUSINESS

There is no movement for increase in rates on this class either here or in London, although almost any underwriter will readily admit that they are altogether too low. There are a few classes of commodities where the values involved are so great that every company is obliged to seek large amounts of reinsurance in order to avoid carrying too large a line, and this has a stabilizing effect on the rates on those particular commodities but occasional rate-cutting continues in other classes to an extent which is entirely unjustifiable by results.

WAR RISKS

For another year, underwriters have been struggling with the difficult subject of War Risks. After Abyssinia, which did not produce many losses, came Spain which has produced several total losses by sinking and capture and now China where grave possibilities are involved. Some progress was made during the year towards rearranging the cover furnished under war-risk policies to suit the situation existing under present methods of conducting war, with particular emphasis on reducing underwriter's liability in regard to war risk on merchandise before being loaded on the steamer and after discharge from the steamer. In the World War the war risk was generally covered only while waterborne but since the war it had become quite usual to cover merchandise in transit on land also. The risk

of aerial bombing in seaports where vast amounts of merchandise might be in warehouses, is more than underwriters can undertake with safety.

DIVISION OF BUSINESS

The number of companies writing Marine business is increasing, being 220 in 1936 against 200 in 1934 and is within one of the peak number, which was 221 in 1931. The following table shows something of how the total business is divided between companies; for instance, 123 companies wrote less than $100,000 each, while there were 17 companies which wrote over $1,000,000 each.

Premium Written	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Under $100,000	50	71	96	112	124	131	125	109	125	123
100,000/500,000	35	45	39	51	55	42	53	52	51	58
500,000/1,000,000	25	20	24	26	21	22	17	23	20	22
1,000,000 or over	22	24	27	22	21	15	14	16	16	17
	132	160	186	211	221	210	209	200	213	220

In 1936 those in the $1,000,000 or over class wrote 48.85 per cent of the total Ocean business and 55 per cent of the Inland, whereas in 1935 they wrote 46.3 per cent of the Ocean and 53.8 per cent of the Inland. One additional company arrived in the $1,000,000 class in 1936.

CASUALTY AND MISCELLANEOUS INSURANCE

By G. F. Michelbacher

Vice-President, Great American Indemnity Company

EXPERIENCE OF 1936

It seems wise to begin this review with an exhibit of the experience of the calendar year 1936 and then to present a statement of certain trends, apparent in 1937, which may influence the record for this year.

The complete facts regarding the business of casualty insurance and corporate suretyship are not available from any source. It is possible, however, to ascertain the aggregate national experience of stock insurance carriers licensed to transact business in New York State and since it is estimated that these carriers write from 65% to 75% of the total business in the United States, information regarding their operations properly may be assumed to be typical. The vehicle producing this vast array of facts is a report required by the New York State Insurance Department known as the "Casualty Experience Exhibit," which, although reported to the insurance department of a single State, presents a complete record of operations of reporting insurance carriers throughout the entire United States.

A summary of the combined Casualty Experience Exhibits for 1936 for 56 stock insurance companies may be found on the next page.

The combined record for 1937, when available, should show a nominal increase in premium volume and some improvement in the aggregate underwriting profit derived from the business.

AUTOMOBILE INSURANCE

Automobile public liability, damage liability and collision insurance (a combination of three forms of coverage) continues to produce more than its fair share of problems. The toll in lives and injuries to person and property arising out of motor vehicle accidents will be greater in 1937 than ever before; but this will be offset in a degree by a larger registration of motor vehicles and by an increased consumption of gasoline, indicating greater road exposure. Where this trend will end, no one knows; but it is arousing a great deal of interest and apprehension and the demand for effective methods of pre-

Line of Coverage	Earned Premiums	Incurred Losses Excl. Claim Exp.	Incurred Expenses	Underwriting Profit (+) or Loss (−)
Accident	$ 31,434,267	$ 12,552,373	$ 16,544,785	+$ 2,337,109
Health	14,956,195	11,090,706	5,608,254	− 1,742,765
Auto Liability	154,063,779	77,308,075	73,569,548	+ 3,186,156
Liability Other Than Auto	64,700,142	26,296,718	37,231,498	+ 1,171,926
Workmen's Comp.	120,275,380	70,415,631	49,168,602	+ 691,147
Fidelity	37,606,331	8,681,354	19,628,505	+ 9,296,472
Surety	38,040,845	8,152,099	24,214,136	+ 5,674,610
Plate Glass	8,950,267	3,985,386	5,254,832	− 289,951
Burglary & Theft	24,054,367	5,799,948	12,861,289	+ 5,393,130
Boiler	6,811,161	986,471	5,795,280	+ 29,410
Machinery	3,208,085	1,187,971	2,036,311	− 16,197
Auto Property Damage	42,985,144	16,116,478	21,810,695	+ 5,057,971
Auto Collision	3,198,639	1,674,049	1,492,805	+ 31,785
P. D. & Coll. Other Than Auto	3,278,253	704,137	1,553,459	+ 1,020,657
Credit	620,304	56,781	322,245	+ 241,278
Sprinkler	590,817	263,914	341,974	− 15,071
Miscellaneous	44,637	46,827	15,343	− 17,533
All Lines	$554,818,613	$245,318,918	$277,449,561	+$32,050,134

vention is growing. So is the public demand for more efficient control over the indemnification of those who suffer as a result of the occurrence of motor vehicle accidents. Compulsory insurance, financial responsibility, application of the principle of compensation without regard for negligence, simplified legal procedure and countless other expedients are being urged upon legislatures as desirable innovations which will insure to those who sustain injury a reasonably prompt and adequate indemnity. That this will distract attention from the fundamental issue, which is the prevention of accidents, seems to be largely ignored.

Insurance carriers continue to provide coverage under the unsettled conditions which prevail in this field. Rates have not changed materially and it is to be doubted whether the 1937 experience will show a result far different from that for 1936, adverse trends having been offset by more restrictive underwriting. Speed, liquor, inadequate traffic and licensing regulations, and lax enforcement of such regulations as do exist are factors with regard to which improvement is imperative.

In the rivalry between Conference stock insurance carriers and carriers of other classes there seems to have developed an adverse selection of risks for the former which is causing them some concern. This probably will persist until some method is found whereby rates for individual private pleasure type motor vehicle owners are made more flexible so that each policyholder may be charged a rate consistent with the hazards of his own risk. The result, when achieved, will be higher rates for substandard risks and lower rates for preferred risks, a system of rating which will not only produce a more adequate premium income for risks now written by Conference stock insurance carriers, but also will enable them to compete more actively and successfully for risks of the better class not at present on their books. Committee work is proceeding on this project at this time and it is significant that the members of the committee now studying the problem are first-rank executives.

WORKMEN'S COMPENSATION INSURANCE

Workmen's compensation insurance experience will probably show a further improvement in 1937 because of the resumption during the first half of the year of more normal industrial conditions. A rise in employment, with higher wage levels, has materially increased the premium income. Along with this has come some relief from

various conditions which, particularly during the late depression, largely influenced the administration and interpretation of workmen's compensation laws in a manner which greatly increased the responsibilities of insurance carriers.

It would be a mistake, however, in the light of the experience for 1936 and 1937, to regard the future of workmen's compensation insurance as altogether rosy. Danger signals have appeared on the horizon. The recent satisfactory experience already is influencing rates downward. This has temporarily removed some of the political pressure which was so strongly exerted upon state supervisory officials, whose duty it was to approve rates during the period when a severe inadequacy of rates had developed and increases in rates were, therefore, necessary. The danger is that the present phase of the cycle will soon close (already there is talk of an approaching depression) and that increasing difficulty will be experienced once more when we turn the corner and are again confronted with the necessity of asking for higher rates in order to maintain adequacy of the rating structure. The wise executive will insist that his underwriters pursue a reasonably conservative attitude towards workmen's compensation insurance business in spite of a temporarily favorable experience. The minor casualty insurance lines will show little change during 1937 as compared with 1936.

MISCELLANEOUS PUBLIC AND PROPERTY DAMAGE LIABILITY INSURANCE

Miscellaneous public liability and property damage liability coverages are producing an ever-increasing premium volume as new conditions and new legal decisions dictate the necessity for coverage against these hazards on the part of countless persons, firms and corporations, whose requirements hitherto have been ignored in whole or in part. It is a feature of this phase of the casualty insurance business that a series of court decisions, beginning spasmodically and then increasing suddenly in frequency, will open up an entire field of prospects who have been blissfully ignorant of the serious legal responsibilities arising out of their activities or their ownership of property. In the development of a new form of coverage, sales resistance is encountered in the early stages; but this phase soon passes with a dawning appreciation of danger and before long a sizable volume of premiums is being written. This accounts for the sudden growth of some departments of the casualty insurance business. A recent example of this has been the rapid growth of products public liability and property damage liability insurance, protecting manufacturers and distributors against their legal liability to consumers and users of their products.

That the ever-present threat of fraudulent liability claims is a matter of deep concern is attested by the fact that the Association of Casualty & Surety Executives has recently announced the appointment, as manager of its Claim Department, of Frank M. Parrish, formerly Assistant Attorney General in the United States Department of Justice. Mr. Parrish may be expected to attack this problem with relentless vigor.

ACCIDENT AND HEALTH INSURANCE

Commercial accident and health insurance continues to show improvement. This line was most unprofitable during the depression largely because of "moral hazard," a fact proved to be a blessing in disguise because it forced insurance carriers to eliminate some undesirable competitive practices formerly indulged in, to simplify coverages and to increase rates. With the business on a sounder actuarial basis, moderate growth should continue with uniformly satisfactory underwriting results.

BURGLARY, THEFT AND ROBBERY INSURANCE

Burglary, theft and robbery insurance may show some slight diminution of underwriting profit in 1937 because of a slight tendency for the

frequency of claims, particularly robbery claims, to increase. This department recently assumed new responsibilities in the division of powers as between inland marine and casualty insurance carriers. These new forms of coverages are still in an experimental state, but the prospects are excellent for the satisfactory development of these new sources of production.

PLATE GLASS INSURANCE

Plate glass insurance, once a source of substantial underwriting profits, has gradually lost ground in premium volume and profit because of competition which has forced rates below the level of adequacy, because of substantial increases in the cost of plate glass and also because of labor troubles in important cities, which have been accompanied by various forms of racketeering activities. This department will produce an underwriting loss which should exceed in amount the loss of 1936. Those executives who tolerate bad competitive tactics in this field upon the assumption that plate glass insurance is profitable are living in the past and do not reckon with present-day or future conditions.

CORPORATE SURETYSHIP

Corporate suretyship (fidelity and surety bonds) will continue to show an underwriting profit, although the premium volume may slightly diminish because of a paucity of public construction projects. Improvements continue in the development of comprehensive (blanket) forms of coverage and much is being done to popularize and sell these new forms as well as other forms of bonds, particularly fidelity bonds. The recent recession of security prices may increase the frequency of fidelity and fiduciary claims because it is unfortunately true that financial stress always brings to light defalcations and embezzlements of dishonest persons, many of whom occupy positions of great trust and responsibility.

STATE REGULATION

In the field of state regulation the most significant development has been the widespread movement for the adoption of insurance codes. The codification of laws that, like Topsy, have "just growed up" into a modernized, simplified code is a worthy project and should be encouraged. Unfortunately, many of the state insurance officials are not content to do only this, but are attempting to write into proposed codes new principles, new restrictions and new regulations, some of which are of such questionable desirability that they have been repeatedly rejected by state legislatures. Furthermore, there seems to be a determination to increase unduly the powers and responsibilities of state supervising officials, a trend which is viewed with grave concern in some quarters.

SECURITY VALUES

Developments in the stock market already referred to have greatly reduced the values of stocks and bonds held in the investment portfolios of insurance carriers below values obtaining on Dec. 31, 1936. Under the regulations adopted sometime ago by the National Convention of Insurance Commissioners, bond values are amortized so that the surplus of an insurance carrier on the so-called "convention basis" is not affected when market values of bonds decline. A reduction in stock values, however, carries with it a comparable reduction in surplus unless a contingency reserve is maintained to absorb security value fluctuations, which usually is not the case. What will happen to the stock market before December 31, 1937 is anyone's guess. If the present level of stock prices is maintained, or if a further recession takes place, the surplus accounts of insurance carriers of all classes except life will be radically affected. However, there would seem to be no danger from this source so far as an impairment of the solvency of insurance carriers is concerned.

CHRONOLOGY OF FINANCIAL EVENTS, 1937

(From *The New York Times*, January 3, 1938)

JANUARY

Jan. 2—Stock market begins year with fractional decline.

Jan. 3—Automobile union votes strike in General Motors mills; conflict is over domination by larger union versus company union.

Jan. 5—Closing of General Motors mills begins; stock market recovers sharply.

Jan. 6—Steel output 79½ per cent of capacity, unchanged from previous week, which was highest of 1936.

Jan. 7—Stocks rise sharply, trading 3,050,000 shares.

Jan. 11—Riot by strikers at General Motors works in Flint, Mich.

Jan. 12—Stock trading 3,564,000 shares. State Guardsmen sent to Flint. Governor of Michigan intervenes to mediate. President Roosevelt submits far-reaching plan of reorganization for Executive Department, with two new Cabinet posts.

Jan. 13—Steel output unchanged at 79½.

Jan. 14—Agreement on "truce" in automobile strike.

Jan. 16—Advance in stocks.

Jan. 17—"Truce parley" in strike broken off by union.

Jan. 18—Stocks decline, then recover; averages close unchanged.

Jan. 19—Stocks lower.

Jan. 20—Second inauguration of President Roosevelt, at new date fixed by Twentieth Amendment. Inauguration ceremonies in open air in rainstorm. Inaugural address generally considered restrained in tone. Steel output up from 79½ per cent of capacity to 81, largest of any week since February, 1930. Pittsburgh operating at 82, orders for rails, machinery and miscellaneous purposes larger. General Motors automobile output reduced 7 per cent, but other companies largely increased production.

Jan. 21—Efforts at renewing strike conferences collapse. Floods from river overflow in Ohio Valley become serious.

Jan. 22—Lewis demands President pay for labor's campaign support by sustaining him in General Motors controversy. President refuses public discussion of strike. Floods converge on Cincinnati, 72 feet in depth. Stocks weak.

Jan. 25—Floods worse; nearly 80 feet in Cincinnati; 750,000 declared homeless. Sloan refuses participation in new strike conference.

Jan. 26—President describes Sloan's attitude as "unfortunate." Sharp decline in stocks.

Jan. 27—Strike and floods reduce steel production from 81% of capacity to 75. Southern Ohio district 15%, against 96 previous week for Ohio River district. Detroit production down from 100% to 93. Steel orders, however, continue heavy, notably from railroads.

Jan. 30—Federal Reserve announces second raising of member bank reserve requirements to 33% above ratio fixed in first advance of July, 1936, and 100% above percentage of requirements prior to that date. Half of the advance would be applied on March 1 and the final half on May 1.

FEBRUARY

Feb. 2—Judge Gadola of Michigan Circuit Court grants injunction, ordering "sit-down strikers" in General Motors plants to evacuate before 3 P.M. next day and prohibiting picketing and interference.

Feb. 3—Steel output rises to 79 per cent of capacity, from 75 previous week. Pittsburgh district 82 per cent, Wheeling higher at 95, Southern Ohio still 19 per cent, against 15 at worst of flood.

Feb. 5—President sent "surprise message" to Congress, asking power to name an additional Supreme Court justice for every existing justice who refused to resign at the age of 70. Sharp break on Stock Exchange, canceling nearly all gains since month began.

Feb. 6—Stock market recovers slowly; President's plan widely opposed; discussed with great animation by Congressmen and in the press. Congressmen deluged with letters of opposition from constituents.

Feb. 10—Steel output up from 79 per cent of capacity to 81, high mark of period. *Iron Age* predicts still higher rate when automobile strike is settled. Quotes steel companies as predicting maintenance of present rate throughout first half.

Feb. 11—Automobile strike settled on General Motors Company's agreement to recognize Lewis's union as an agent for collective bargaining, but only for employees who are members of the union. Provision also that no strike shall hereafter be called pending negotiations between company and union. Sharp rise in automobile and steel shares, but general stock market moves forward slowly.

Feb. 13—May wheat goes to $1.38½, highest since first week of December, 1929.

Feb. 17—Steel output 82½ per cent of capacity, against 81, 79 and 75 in three preceding weeks; highest percentage since October, 1929. *Iron Age* reports "world famine" in pig iron, 100,000 tons shipped to Japan, but notes increasing fear of home labor troubles.

Feb. 23—Sharp fall stocks, bonds lower, reflecting dislike labor situation and White House policies.

Feb. 25—Steel output rises to 83 per cent of capacity; unfilled orders above month before. Prices advanced for iron and steel, with prediction of rise $2 to $6 per ton on steel products, probably with view to wage advances. *Iron Age* says "steel production is being pushed to the fullest extent that existing facilities, together with supplies of coke and pig iron will permit." Exports delayed by lack of available ship room; some foreign bids above domestic prices.

MARCH

March 2—Steel strike averted by grant of higher wages and recognition of Lewis's C.I.O. labor union by Carnegie-Illinois Steel Company. Iron and steel prices advanced.

March 3—Steel production rises from 83 per cent of capacity to 85; highest of period and comparing with 56 same date in 1936. United States Senate passes drastic Neutrality Bill, but with provision for "cash-and-carry" purchases by belligerents.

March 4—President Roosevelt makes defiant speech at "Victory dinner" on Supreme Court reorganization.

March 9—Roosevelt gives radio broadcast in defense of his court plan.

March 10—May wheat at $1.40, highest since 1929 except three days of 1936. Steel production 87 per cent of capacity, highest since September, 1929. Week's advances in steel prices range from $2 to $12 a ton. Composite price on finished steel up 11⅞ per cent; now 8 per cent above highest of 1929. Chrysler automobile plants in Detroit seized by "sit-down" strikers, demanding concession of all bargaining powers to Lewis's union.

March 15—Circuit Judge Allan Campbell of Michigan issues injunction to "sit-down" strikers and labor leaders, ordering Chrysler plants to be vacated by 9 A.M. March 17.

March 16—Moderate rise in stocks; sharp break in United States Government bonds.

March 17—Further decline in United States bonds, carrying prices 2 to 5 points below their high record, mostly reached in January and February, 1937, or in December, 1936. Steel output up from 87 per cent of capacity to 89, highest since May, 1929. Estimated weekly production 1,168,838 tons, comparing with all-time high of 1,193,284 for May, 1929, when industry operated at 102 per cent of the then rated capacity. Pittsburgh's present rate 91 per cent, Detroit 100.

March 18—United States bonds break again, declines in some ⅞ point. General bond average down ½ point, stocks decline.

March 19—Further fall in governments.

March 20—Some United States bonds down ¾ point. Chrysler "sit-down" strikers defy Governor of Michigan.

March 22—United States bonds fall ⅛ to ⅜ point; stock averages down 3 points; general bond average 4 points below year's highest.

March 23—Slow recovery in United States bonds. Stock average up ¾ point, general bond average up ⅛.

March 24—United States bonds go higher; advance ⅛@⅝. Stock average rises 1½ points, general bond average ¼. May wheat rises to $1.47⅞; cash wheat at Chicago highest since February, 1929. Steel output up from 89 per cent to 90. Pittsburgh at 93 per cent, highest since World War. Scrap at Cleveland rises $1 a ton.

March 25—United States bonds lower; stocks weaken.

March 27—United States bonds up ⅛@⅞ point, on smallest trading in five months. Stocks higher; May wheat rises 2¼ cents, to highest of season.

March 31—United States bonds fall ⅛@¾ point, volume of sales doubled. Stock average lower, general domestic bond average little changed. Steel output 91 per cent of capacity. *Iron Age* estimates weekly production 1,191,882 tons, against all-time weekly high level of 1,193,284 in May, 1929. Steel mills reported as acting concertedly against excessive building up of inventories by customers.

APRIL

April 1—United States bonds decline ½ to 1¼ points; stock market weakens.

April 2—Corn rises 4½ cents, wheat 2½ cents. United States bonds recover fractionally.

April 3—Corn up 2⅝ cents, wheat 3½ cents. United States bonds irregular.

April 5—Reserve Board's open market committee announces that Federal Reserve Banks are "prepared to make open market purchases of United States Government securities, with purpose of maintaining orderly conditions in the money market" and insuring "orderly readjustment of member banks to the increased reserve requirements effective May 1." United States bonds recover only fractionally, stock market unresponsive, on trading of less than 1,000,000 shares.

April 6—United States bonds uncertain, small declines predominate. Stock averages down ⅞, bond averages ⅛.

April 7—Steel output unchanged at 91 per cent of capacity.

April 9—Sterling $4.88½, low of month.

April 12—Wagner Labor Relations Act upheld by Supreme Court, ruling industries organized on national scale are within regulatory power of Congress. One case decided unanimously, four others by 5-to-4 vote. Stocks rise, bonds slightly lower.

April 13—Stock average rises 2¼ points.

April 14—Steel output unchanged at 91 per cent of capacity. Scrap lower; *Iron Age* "scrap composite" declines for first week since November.

April 21—Steel output 92, highest of period. Estimated week's production exceeded weekly average of any months on record. Stocks advance.

April 22—Sharp decline in stocks. Talk renewed of placing tax or license fee on gold imports, of which Treasury, since "sterilizing" notice, has bought $505,000,000, paying with borrowed money.

April 26—Widest decline in stocks in a year; "averages" at lowest of 1937; bonds also lower; wheat down 4½ cents. United States Steel quarterly meeting votes 5¾ per cent for quarter on preferred shares, of which 1¾ per cent was regular dividend. Unpaid accumulations on past dividends reduced to 5¼ per cent.

April 27—Moderate recovery in stocks. President Roosevelt warns against "the present hazard of undue advances in prices."

April 28—Stock market breaks heavily, 2,500,000 shares sold. Averages fall nearly 3 points, individual de-

clines run to 4 to 7 points in many stocks. Reported difficulties in London market and President Roosevelt's warning against high commodity prices assigned as cause. Company bonds fractionally lower, United States bonds firm. Day's gold engagements in London $21,600,000, record for 1937. Steel output down from 92 per cent to 90½, due to floods. Scrap steel lower, but sentiment in steel trade hopeful.

April 29—Stocks recover irregularly; transactions smaller. Recovery at London, after three days of demoralization. Pound sterling rises sharply against dollar, touching $4.95, highest since tripartite agreement was established in September, 1936.

April 30—Sharp advance in stocks and bonds at week-end on light trading. Most of week's losses recovered.

MAY

May 1—Final increase of member-bank reserve requirements goes into effect; increase of one-seventh, compared with March 1, of 100 per cent compared with Aug. 15, 1936. Surplus member bank reserves reduced to $890,000,000, as against $1,640,000,000 week before, $1,310,000,000 on March 3, after second increase required was $1,813,000,000 Aug. 19, after first raising of requirements, and $3,167,000,000 on Aug. 12, before the first action. Markets unaffected.

May 3—Only 638,000 shares of stock sold in five-hour day. Market firm.

May 5—Stocks inactive, 800,000 shares sold. Steel output 92 per cent, highest of 1937, up from 90½. *Iron Age* predicts at least 90 per cent throughout May.

May 12—Steel output unchanged at 92 per cent of capacity. Steel scrap prices decline 50¢@$1.50 per ton, making five consecutive weekly declines totaling $3.17 for "scrap composite" from $21.92 April 6 to $18.75.

May 15—Recurrent rumors Sweden will break from "sterling bloc" and lower gold price in Swedish currency.

May 17—Smallest stock trading in a year. Visible supply of wheat decreased for week 2,280,000 bushels, to smallest since 1921. Corn in public elevators inadequate to meet May contracts. Visible supply of oats smallest since 1910.

May 18—Stocks recover, on larger trading. Wheat rises 4¾ cents, corn 1⅜ cents, oats 1¼ cents.

May 19—Steel production unchanged at 92 per cent of capacity. Scrap prices lower.

May 24—United States bonds rise on Supreme Court's decision favoring Social Security Law; assumed that large purchases government bonds will be made with fund.

May 25—United States Steel declares 2 per cent dividend on preferred against arrears, leaving only 3¼ per cent unpaid.

May 26—May corn sells at $1.40, highest since 1920. Steel output declines from 92 per cent to 85, chiefly because of labor troubles. Decline in scrap prices halts, for first time in seven weeks.

May 28—Strike at Republic Steel subsidiaries ordered; 70,000 laborers out of work.

JUNE

June 1—Strike of 80,000 laborers at Republic Steel, Youngstown Sheet and Tube, and Inland Steel companies against refusal of companies to sign written contracts with C.I.O. union subsidiary. Workers remaining in mills blockaded by union pickets, with many demonstrations of violence. Stocks decline sharply on rumors of gold price reduction and attitude of Italy and Germany toward Spain.

June 2—Stock Exchange transactions, 535,000 shares, smallest of any full day since April 3, 1935. Week's receipts of imported gold, $30,457,000, of which $23,056,000 from England.

June 3—Steel output declines, as result of strikes, from 85 per cent to 77½. In Youngstown district, decline was from 84 per cent to 45.

June 5—Uneasiness over abnormally large shipments of gold to United States, to go into Treasury's "inactive" gold fund. Day's London sales gold, $6,484,000; for two weeks, $84,000,000.

June 7—Treasury announces issue of $800,000,000 Treasury notes for quarterly financing; half at 1⅜ per cent, due September, 1939; half at 1¾ per cent, due March, 1942. Last previous sale of Treasury notes, five-year issue in December at 1¼ per cent; increased rate being probably due to fall in price of United States bonds on open market. Price gold in London advanced 9.8 cents per ounce to $34.66, which, as cost gold shipment London to New York is 23 cents per ounce, still gives profit to shippers. Day's gold engagements abroad $9,910,000, of which $7,336,000 from England.

June 8—British Chancellor of Exchequer denies any purpose of lowering price of gold. Steel output 78 per cent of capacity, against 77½. Scrap declines to lowest of 1937 to date.

June 14—Sharp break in stocks.

June 16—Steel output 77 per cent of capacity. Strikes continue. Gold resources of French Government's stabilization fund of 10,000,000,000 francs admitted to be exhausted.

June 17—Mediation board in steel deadlock appointed by President Roosevelt through Labor Department; C. P. Taft, Lloyd K. Garrison and Edward F. McGrady named. Stocks recover on news.

June 18—Saturday; smallest day's trading on Stock Exchange since Oct. 27, 1924.

June 19—Governor Earle of Pennsylvania declares martial law at Johnstown; orders picketed steel works to close down.

June 20—Blum Cabinet defeated in French Senate by vote of 168 to 96. Blum resigns French Premiership; Chautemps appointed, with Bonnet as Finance Minister. Paris stock market closed.

June 21—President Roosevelt appeals to steel executives not to reopen Youngstown plants pending negotiations. Smallest full-day trading in stocks since April 1, 1935.

June 23—Steel output 75 per cent, against 77; operations reported lower even where strikes are not a factor. *Iron Age* estimates capacity made idle by strikes equals 11,000,000 tons per annum.

June 28—French Ministry announces loss of gold by French bank and stabilization fund between June 1 and June 28 were 7,800,000,000 francs, or $350,000,000.

June 30—French Parliament votes to authorize new Ministry, until Aug. 31, to decree "any measures tending to insure the repression of attacks on the credit of the State, the prevention of speculation, economic recovery, control of prices, equilibrium of the budget and of the treasury, and the defense, without exchange control, of the reserves of the Bank of France." Steel output rises to 76½ per cent.

JULY

July 1—Secretary Morgenthau officially states that the tripartite money agreement will be continued. British exchange equalization fund increased by £200,000,000 to £550,000,000. French Bourse reopens.

July 6—Strong advance in stocks; 1,400,000 shares dealt in. London market rises. Expected defeat of John L. Lewis and C.I.O. an influence.

July 7—Steel output 70 per cent, lowest of year because of holiday week. Stocks rise again, on trading of 1,400,000 shares.

July 8—Sterling rises sharply, in purchases by Paris, offset by sale of francs.

July 14—Death of Senator Robinson, Administration leader, a severe blow to Roosevelt Supreme Court plan. Steel production 83, highest since beginning of June, due to reopening of mills threatened by strikers.

July 16—Sterling goes to year's highest.

July 19—Governor Lehman of New York writes to Senator Wagner,

strongly opposing Roosevelt's court bill.

July 21—Administration's Supreme Court bill abandoned. French Government agrees to revalue French bank's gold stock on basis of devalued franc. French Finance Minister announces reduction of government expenditures will reduce Treasury borrowing by 7,000,000,000 francs in 1937 and 25,000,000,000 in 1938. Steel output 82 per cent.

July 22—Fall River Line abandons steamer services because of strikes.

July 23—Sterling exchange at $4.98 7-16

July 28—Steel output rises to 85.

AUGUST

Aug. 1—S.E.C. orders Stock Exchange to expel Meehan for rigging market.

Aug. 3—Bank of France rate reduced from 5 per cent to 4.

Aug. 4—Wheat market unsettled. Steel output unchanged at 85 per cent.

Aug. 5—Wheat rises 3 cents per bushel.

Aug. 6—Wheat declines 2⅝ cents.

Aug. 9—Cotton declines from 11.24 to 10.82, lowest of year, on government's estimate of largest cotton crop since 1931, half million bales above many private estimates.

Aug. 10—Spot cotton lower at 10.97 cents.

Aug. 11—Large grain crop estimates cause 4⅝-cents decline in corn. Wheat declines 3⅞ cents, but recovers 4¾ on news of crop failure in Northwestern Canada. Cotton holds steady. Steel output 84½ per cent.

Aug. 12—Wheat declines 1 cent, corn 2 cents; cotton falls to 10.48 cents, lowest since 1933. Northern Securities Company goes out of business by stockholders' vote.

Aug. 13—Wheat down ⅝ cent, corn 1¼ cents. Cotton recovers to 10.70. Stocks strong.

Aug. 16—Japanese Government bonds fall 3½ to 4 points. Decline since 1937 highest, 14¼ to 18.

Aug. 17—Stock Exchange annual report opposes S.E.C. proposal of broker-dealer segregation. Germany announces 700,000,000 mark domestic loan.

Aug. 18—Steel output 83 per cent of capacity, against 84½.

Aug. 20—Chicago and Atlanta Reserve banks reduce rediscount rate from 2 per cent to 1½.

Aug. 21—Congress adjourns.

Aug. 23—Government sets price for cotton loans at 9¢. All cotton future options fall below 10¢.

Aug. 25—Railroads refuse Brotherhoods' demand for 20 per cent increase in wages. Brotherhoods threaten strike of 250,000 employees on Sept. 6. Steel output unchanged at 83 per cent.

Aug. 26—British Ambassador to China shot in automobile by Japanese airplane. Break in stocks, but foreign bonds hold steady, Japanese dollar bonds advancing 2@2⅝ points. Offer of mediation by Federal board in railway wage dispute accepted. New York Federal Reserve Bank reduces rediscount rate from 1½ to 1 per cent; lowest on record for any central bank. Andrew W. Mellon dies.

Aug. 27—Stocks decline again. Foreign dollar bonds continue steady, Japanese up 2@2½ points.

Aug. 29—British Government sends sharp note to Japan, demanding disavowal and indemnity for attack on Ambassador. Stocks recover.

Aug. 30—Commodity Credit Corporation announces government loans on 65 per cent of cotton raised, with maximum lending price of 9¢. Trading in stocks 455,000 shares, second smallest for five-hour day since April 1, 1935; bond trading smallest since July 5, 1918.

Aug. 31—Cotton down $1 per bale; spot price 9.38¢ per pound, lowest since October, 1933.

SEPTEMBER

Sept. 1—Steel output unchanged at 83 per cent. Decline in scrap-iron prices. Stocks weak on torpedoing of English vessel in Mediterranean by unidentified submarine.

Sept. 2—French Bank rate reduced from 4 per cent to 3.

Sept. 6—Russian Government declares Italian submarines sank two Russian merchant vessels. Demands from Italian Government apology, damages and punishment offenders. European stock markets firm, but closed before Russian note published. New York market closed for Labor Day. Treasury announces no new loan issues for cash in September financing, but offers fifteen-month 1¼ per cent Treasury notes or five-year 2 per cent Treasury notes in exchange for $817,483,000 maturing 3¼ per cents, issued in 1932.

Sept. 7—European markets lower, but but day's declines not large and trading light, but heavy break in New York stock market causes 6⅜-point decline in averages, described as largest any day since July, 1933. Transactions, 1,871,000 shares, largest since April 29, U. S. Steel falls 8 points. J. I. Case 16. Only fractional recovery before closing. Italian dollar bonds decline 4⅜ points; other European dollar bonds move little; some rise fractionally. Wheat rises 4¾¢.

Sept. 8—Stocks recover fractionally, but end below previous day's closing. Transactions, 2,257,000 shares. European markets lower on overnight news Wall Street decline, but not panicky. Spot cotton falls to 9⅛ cents, on increase 505,000 bales in government's monthly estimate of yield. Spot cotton falls from 9.46 cents to 9.33 cents. Wheat advances, then declines.

Sept. 9—Stock averages recover 2¾ points, making 4⅜-point recovery from week's low point. Trading, 1,411,000 shares. European markets steady. French franc falls to 3.62½ cents, lowest since November, 1926, on French bank statement, showing heavy government borrowing from bank. Week's steel output down from 83 to 70 per cent; decrease ascribed Labor Day holiday, but declined corresponding week 1936 only from 72 to 70 per cent and rose 1935 from 50 to 50½ per cent.

Sept. 10—Renewed break stocks. Averages down 6½ points to lowest since April 30, 1936. Day's sales, 2,322,000 shares. Wheat and corn lower. French franc declines to 3.56⅛ cents.

Sept. 11—Stocks recover 2⅜ points in quiet Saturday market. Europe scouts "war scare" theory. Government grain-crop report reduces estimates, but wheat falls 2⅝ cents, corn, 2⅜.

Sept. 12—Treasury announces release of $300,000,000 inactive gold, "to enable banks to meet readily any increased seasonal demands for currency and credit." French franc steady.

Sept. 13—Stock average rises 2¼ points, fall 5¾, recover 2¼; net loss, 1¼; sales, 2,561,000 shares. Wall Street declares Treasury action had hurt market by showing alarm, but U.S. bonds rose ⅛ to ⅓ point, and discount on nine-months issue of Treasury bills shortened from 0.711 per cent to .0534. Franc weakens.

Sept. 14—Stock average rises 4¾ points, closing 1 point lower; transactions 1,508,000 shares. United States bonds up ⅛ to ⅞ point; company bonds average up ⅛. Corn rises 2½ cents on small marketable supplies.

Sept. 15—Quiet stock market. French franc down to 3.37⅜ cents, against 3.74¼ at end August and 4.67⅝, year's highest. Steel output rises from 70 per cent to 80; *Iron Age* states week's figure as, except for 1937, highest of any month since Spring of 1930. Member bank surplus reserves up $120,000,000 in week to $880,000,000. Holdings of United States bonds reduced $68,000,000.

Sept. 16—Corn rises 4⅞ cents at Chicago to $1.10½. September delivery virtually cornered.

Sept. 17—September corn up 6¼ cents further, to $1.16¾, as against 94 cents, Sept. 7 and 89¾ cents July 30. Matter of corner taken up by Chicago Board of Trade.

Sept. 18—Stock averages down 2¾ points in dull Saturday market; influenced by President Roosevelt's belligerent speech previous evening on Constitution Day. Sep-

tember corn falls 8½ cents to $1.04¾.

Sept. 20—Stocks lower. September corn falls 4 cents to 99¼, recovers 3. United States bonds decline, having risen ¼ to ⅞ point since Treasury's gold release of Sept. 30. Nine-month Treasury bill issue sold at 0.441 discount, against 0.711 before Sept. 3.

Sept. 21—Stocks recover. Corn rises 3½ cents, reacts 1½. United States bonds fractionally higher despite member-ban statement, showing United States obligations held to have decreased in week.

Sept. 22—September corn rises 7⅞ cents. Member banks report decrease for week of $192,000,000 in United States Government bond holdings, $111,000,000 of decrease at New York. Largeness of decrease ascribed to maturity of Treasury bills Sept. 15, which were paid off in cash. Steel output 76 per cent, against 80.

Sept. 23—Stocks weak but trading small. Federal Reserve reports member-bank surplus reserves up $140,000,000 in week to Sept. 22 to $1,020,000,000; but holdings of United States Government securities by New York member banks decreased $111,000,000, largely because of week's redemption without replacement of $150,000,000 Treasury bills.

Sept. 24—Heavy break on Stock Exchange; stock average down 5 points, on sales of 2,482,000 shares, against 887,000 preceding day. United States Steel down 5¼ to 80⅜, or 46 points under year's highest. September corn down 6¼ cents, then up 4¼. Rumor of action against corner manipulation by Chicago Board of Trade.

Sept. 25—Before market opens, governors Chicago Board of Trade suspend trading in September delivery of corn. Setting price for open September contracts fixed at $1.10 per bushel. Corn for October delivery declines to 70¼ cents, closing at 73⅜ cents.

Sept. 27—Vigorous recovery in stocks, averages up 4⅛ points from day's lowest to highest. Advance followed early decline of ⅝. Transactions 2,200,000 shares. October corn declines to 72½ cents. Treasury places $50,000,000 nine-month Treasury bills at discount of 0.373, the lowest discount since February and comparing with 0.711 before Treasury's release of gold Sept. 13.

Sept. 28—Further recovery in stocks.

Sept. 29—Three-month contracts on francs at discount of 26¼ points widest of year to date. Steel output down from 76 per cent to 74.

OCTOBER

Oct. 4—Stocks decline, trading only 631,000 shares.

Oct. 5—Stock averages fall 6⅜ points, on trading of 1,680,000 shares.

Oct. 6—Recovery of 2⅜ points in stock averages. Steel output falls to 66 per cent of capacity, against 74. Scrap steel lower, *Iron Age* composite at year's lowest.

Oct. 8—Stock averages fall 2⅞ points.

Oct. 11—Stock averages down 4⅝. Recovery in French franc, on reassuring result in French elections.

Oct. 13—Averages decline 3⅛, going below par for first time since July, 1935; then recover 2¼. Steel production declines from 66 per cent of capacity to 63½, smallest since March, 1936.

Oct. 18—Stock average breaks 7½ points to 91.26, lowest since June 4, 1935. Day's transactions 3,227,000 shares, largest since March 3. Bond average falls 1½ points to 71.98, lowest since Dec. 2, 1933, on largest business since April 29. Iron and Steel Institute estimates current steel production as 55.8 per cent of 12⅓ per cent down for week.

Oct. 19—Violent decline and recovery in stocks; trading 7,287,000 shares, largest since July 21, 1933. Stock averages declined 6⅜ points early, but recovered 7⅝, closing at net advance of ⅝ point. Low point of day lowest since April 17, 1935. Some active stocks declined 7 points, recovering 8 to 11. Bond averages down ⅝ point, but many

individual declines of 1 to 13 points, with less recovery than in stocks. Foreign bond averages down 5/8 point, with many individual declines of 1 to 3 points.

Oct. 20—Rapid recovery in stocks continues. Averages up 6⅝ points, industrial average alone up 11⅝; closing near the highest. Trading 4,336,620 shares. Steel common declines 3⅜ points; then rises 3⅛. Bond average up 1¼ points. Steel production down from 63½ per cent to 55½, lowest since March, 1936. Scrap down $1 at Pittsburgh.

Oct. 21—Stock average rises 2⅞ points, then declines 1½; trading 3,636,000 shares. Decision of Commerce Commission, granting higher rates to railways, rumored in forenoon, confirmed in afternoon. Bond average up ¾ point.

Oct. 22—Stocks turn weak; averages rise ½ point, then decline 3. Day's trading 2,112,000 shares. Bond average up ⅜ point.

Oct. 23—Stocks break heavily in Saturday market; sales 1,565,000 shares. Stock averages down 4 points, recovering only ¼. Industrial stock average down 4⅞; Steel common falls 5⅛ points. Bond average down 5/8.

Oct. 25—Vigorous upturn in Monday market; sales 2,335,000 shares. Stock averages rise 5½ points; industrial average up 9⅓ points. Steel common rises 6½ points. Bond average up ⅓ point.

Oct. 26—Stock averages rise 1⅜ points, then react 3¼. United States Steel resumes dividends on common stock, suspended since June, 1932; arrears of $65,751,000 in preferred stock's cumulative dividend, due to its reduction from 7 per cent to 2 since 1932, having all been paid off.

Oct. 27—Federal Reserve reduces required margins on purchased stocks of 40 per cent, as against 55 per cent, maintained since February, 1936; also establishes requirement of 50 per cent margin on short sales, against 10 per cent previously required by Stock Exchange. Stock market easier; trading smallest since Oct. 4. Steel output down from 55½ per cent to 51. Scrap prices reduced $1 further, but trade organs intimate that low point in steel production may have been reached.

Oct. 28—Stock averages rise 4¾ points, reacting 2⅝.

Oct. 29—Averages rise 4⅛ and fall 2.

NOVEMBER

Nov. 1—Sterling rises 5/8 cent to $4.96 9-16. Stocks dull and lower.

Nov. 2—Election day. Results mixed in various States. La Guardia re-elected Mayor of New York by 454,425 plurality, notwithstanding campaign against him by Roosevelt aides, Farley and Wagner, and Gov. Lehman.

Nov. 3—Stock averages down 4 points, trading 1,734,000 shares. Sterling rises to $4,97 1-16. Steel output declines from 51% to 48.

Nov. 4—Averages down 2½ points. Sterling rises to $4.98 3.16.

Nov. 5—Railways file petition with Commerce Commission for 15% advance in rates.

Nov. 6—Sterling goes above $5, for first time since Sept. 25, 1936. Stock averages down 2¾, but recover.

Nov. 8—Averages down 2¾ points, with recovery. Sterling $5.03 1-16; gold's price at London equivalent to $35.24 per ounce. Treasury announces export of $10,250,000 gold to France.

Nov. 9—Stock averages rise 1⅓ points; trading 1,040,000 shares. Sterling falls to $4.99⅞; gold at London declines to equivalent of $35.098 per ounce.

Nov. 10—Stocks recover sharply on intimations that Washington will relax its more radical policies regarding taxes and utilities. Stock averages up 4⅝ points, sales 1,923,000 shares. Sterling falls to $4.99⅜; $5,000,000 gold engaged for London. In evening session of Academy of Political Science, Treasury Secretary Morgenthau makes a moderately reassuring speech regarding government's attitude towards business. Steel output falls from 48% to 41; lowest since July 10, 1935.

Nov. 11—Armistice day holiday. Chairman Harrison of U. S. Senate Finance Committe eexpresses purpose of revising the undistributed-profits tax.

Nov. 12—Stocks irregular; 1,881,000 shares sold. Averages up 2¾ points, then down 2⅛. Sterling down to $4.98⅛, lowest since Nov. 4. French bank rate reduced from 3½% to 3.

Nov. 15—Congress reconvenes for extra session. Evidence at once presented of revolt from the President's "must" policies, and of determination to promote business recovery, primarily through mitigation of the tax burden. President's message conciliatory, but disappointing both to Congress and the country for absence of broad vision and emphasis that whatever help is given should be for "small business." Stock market averages rise 1⅓ points, then decline 3¼. Suit against the TVA opens in lower court at Chattanooga.

Nov. 16—Stock averages decline 3 points and recover 1⅜. Sterling recovers to $5.01 9-16.

Nov. 17—Stock averages recover 1⅞ points, then relapse 1⅝. Steel output falls to 35 per cent of capacity, lowest since 1934 except for one week of July, 1935. *Iron Age* remarks: "So drastic has been the drop in operations that it may furnish its own correction."

Nov. 18—Stocks weak again. Bank of England's reserve ratio up from 26.9 to 42.8. Bank of France gains 3,127,000,000 francs gold, reserve ratio rises 51.27 to 52.27.

Nov. 19—Stock averages fall 5⅛ points, with slight recovery; sales 1,886,000 shares.

Nov. 20—Averages rise 2 and fall ⅜. $10,000,000 gold shipped to France.

Nov. 22—Averages down 4½, then up ⅓.

Nov. 23—$5,000,000 gold shipped to France. Chairman Douglas of SEC declares that, unless security exchanges put into effect a comprehensive plan of improving administration of their business, SEC will impose further regulations.

Nov. 24—Averages down 2⅛, to lowest of November and season to date, then up ⅜. Steel output for whole country 33 per cent, against 35 previous weeks, but *Iron Age* estimate of Wednesday is above Steel Institute's 31 per cent estimate of Monday, and decline is halted at Chicago and Cleveland. *Iron Age* notes that "policy of buyers is to reduce inventories."

Nov. 25—Stock averages up 3⅞, with fractional reaction.

Nov. 27—Averages rise 4½ points, then decline ⅜.

Nov. 29—Petition for 15 per cent rise in railway rates argued before Commerce Commission.

Nov. 30—Averages rise 3⅜, reacting 1½; trading light.

DECEMBER

Dec. 1—Slight reaction in stocks. Steel production declines from 33 to 31 per cent. Scrap prices failed to decline in week, for first time since late August.

Dec. 2—Stock averages rise 1⅞ points.

Dec. 3—Averages rise 2⅞, reacting 1⅛.

Dec. 7—The late Andrew W. Mellon cleared by Tax Appeals Board of "hounding" charges by Department of Justice of fraud in his personal income tax statements.

Dec. 8—Steel output declines from 31 to 27½ per cent, but barometric "scrap" market rises for first time since August and railway loadings of ore increase over 1936, for first time since October.

Dec. 10—Commerce Commission refuses immediate "emergency advance" in railway freight rates. President Roosevelt says at press conference that "the quicker a decision is reached on higher freight rates the better."

Dec. 11—Commerce Commission advances date for hearings on higher railway rates to Jan. 17, instead of Feb. 7.

Dec. 12—American warship sunk by Japanese aviation bombs in Yangtze River.

Dec. 13—Stock averages down 3½ points, recovering ¼. Our State Department demands from Japan

apology, reparation, assurance no repetition outrage.

Dec. 14—Heavy foreign buying of corn; 600,000 bushels engaged; price up 1⅜¢. Treasury raises $512,544,450 by selling for cash $293,521,000 2½ per cent eight-year bonds and $219,032,000 1¾ per cent five-year notes. $260,767,000 maturing 2⅝ per cents exchanged into the two issues.

Dec. 15—Japan recalls aviation commander responsible for bombing of American ships; Japanese bonds quiet at 7 and 9 points above year's lowest. Steel output unchanged at 27½ per cent; first week without decline in more than three months. Scrap still rising; *Iron Age* finds stocks of steel in consumers' hands very low.

Dec. 16—$7,217,000 gold arrives from Japan; making, with $5,800,000 on the way, $239,000,000 gold imported from Japan since March 8. Jesse Jones announces RFC is "willing to make any loans within reason which the railroads may need." Expects such loans will not exceed $25,000,000.

Dec. 18—Averages up 1¼ point. Estimated gold exports, Oct. 1–Dec. 15. Included $40,000,000 shipped openly, $70,000,000 sent out unannounced by Treasury, and possibly more transferred by stabilization fund.

Dec. 20—Averages up 1 point.

Dec. 22—Steel output declines from 27½ per cent of capacity to 23½, due to slack demand in inventory-taking period. Rise in steel scrap continues. *Iron Age* describes "spotty improvement in orders" which is possibly a forerunner of more widespread buying interest sometime in January." Stock averages down 1⅜ points.

Dec. 27—Stock averages decline 3¼ points on Assistant Attorney General Jackson's broadcast, intimating enforcement Anti-Trust Law against alleged "monopolies." Japanese dollar bonds rose 3¾ and 5½ points, on our State Department's acceptance of Japanese Government's apology for *Panay* outrage and its promise to punish offending naval officers and prevent recurrence of incident.

Dec. 28—Heavy selling on Stock Exchange; 2,381,000 shares dealt in, largest since Oct. 29. Stock averages decline 3½ points to lowest of year, recovering fractionally. Silver bullion at London declined to 18 3-16d per ounce; lowest since May 1, 1934; London silver agreement and U. S. President's silver-purchase decree of Dec. 21, 1933, fixing price for four years above market, to expire by limitation Dec. 31. Assistant Attorney General Jackson again attacks "big business" in a speech at Philadelphia.

Dec. 29—Market quiets down; stock averages rise 1¾ points. Steel output around 20 per cent of capacity; lowest since September, 1934. Steel scrap continues to rise. *Iron Age* "scrap composite price" 83¢ per ton above November's lowest; advance of 6⅜ per cent. Secretary Ickes violently attacks "big business" in broadcast speech.

Dec. 30—Stock average advances 2⅛ points, closing below the best.

Dec. 31—Averages decline 1½ points, recovering ⅞. President issues decree reducing government price for silver from 77.57 cents per ounce to 64.44. Open market price 43⅜ cents.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

ECONOMICS

ACCOUNTS ASSN. OF N.Y., 1776 Broadway, New York City.

AMERICAN ECONOMIC ASSOCIATION, Northwestern University, Evanston, Ill.

AMERICAN FAIR TRADE ASSN., 71 W. 23rd Street, New York City.

AMERICAN HOME ECONOMIC ASSN., Mills Building, Washington, D.C.

AMERICAN INSTITUTE OF ACCOUNTANTS, 135 Cedar Street, New York City.

AMERICAN INSTITUTE OF WEIGHTS AND MEASURES, 33 Rector Street, New York City.

AMERICAN RETAILERS', INC., 128 W. 31st Street, New York City.

AMERICAN SOCIETY OF CERTIFIED PUBLIC ACCOUNTANTS, National Press Building, Washington, D.C.

AMERICAN STATISTICAL ASSN., INC., 722 Woodward Building, 15th and H Streets, N.W., Washington, D.C.

CHAMBER OF COMMERCE OF THE UNITED STATES, 1615 H Street, N. W., Washington, D.C.

CONSUMERS' LEAGUE OF NEW YORK, 112 East 19th St., New York City.

CO-OPERATIVE LEAGUE OF U.S.A., 167 W. 12th Street, New York City.

FRENCH CHAMBER OF COMMERCE, 647 Fifth Ave., New York City.

GENERAL SOCIETY OF MECHANICS & TRADESMEN OF NEW YORK CITY, 18 W. 44th Street, New York City.

HOME MARKET CLUB, 38 Chauncey Street, Boston, Mass.

INSTITUTE OF ECONOMICS, 722 Jackson Place, Washington, D.C.

INTERNATIONAL ACCOUNTANTS' SOCIETY, 3411 S. Michigan Ave., Chicago.

ITALIAN CHAMBER OF COMMERCE IN NEW YORK, 99 Hudson Street, New York City.

LEAGUE FOR INDUSTRIAL RIGHTS, 40 Wall Street, New York City.

MELLON INSTITUTE OF INDUSTRIAL RESEARCH, University of Pittsburgh, Pittsburgh, Pa.

NATIONAL ASSN. OF COST ACCOUNTANTS, 385 Madison Ave., New York City.

NATIONAL ASSN. OF CREDIT MEN, 1 Park Ave., New York City.

NATIONAL ASSN. OF REAL ESTATE BOARDS, 59 E. Van Buren St., Chicago, Ill.

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC., 1819 Broadway, New York City.

NATIONAL CONSUMERS' LEAGUE, 156 Fifth Ave., New York City.

NATIONAL ECONOMIC LEAGUE, 6 Beacon Street, Boston, Mass.

NATIONAL ECONOMY LEAGUE, 280 Madison Ave., New York City.

NATIONAL FOREIGN TRADE COUNCIL, 26 Beaver St., New York City.

NATIONAL RESEARCH COUNCIL, 29 W. 39th Street, New York City.

NATIONAL WHOLESALE GROCERS' ASSN. OF THE U.S., 60 Hudson St., New York City.

NEW YORK STOCK EXCHANGE, 11 Wall Street, New York City.

ORDER OF UNITED COMMERCIAL TRAVELERS OF AMERICA, 632 N. Park St., Columbus, O.

PETROLEUM IMPORT & EXPORT CORPORATION, INC., 70 Pine Street, New York City.

BANKING AND CURRENCY

AMERICAN BANKERS ASSN., 22 E. 40th Street, New York City.

AMERICAN INSTITUTE OF BANKING, 22 E. 40th Street, New York City.

INVESTMENT BANKERS ASSN. OF AMERICA, 531 First National Bank Bldg., 33 S. Clark St., Chicago, Il.

NATIONAL ASSN. OF MUTUAL SAVINGS BANKS, 60 East 42nd St., New York City.

NATIONAL ASSN. OF SUPERINTENDENTS OF STATE BANKS, Nashville, Tenn.

NEW YORK CLEARING HOUSE ASSN., 77 Cedar St., New York City.

UNITED STATES BUILDING AND LOAN LEAGUE, 104 S. Michigan Ave., Chicago, Ill.

INSURANCE

ACTUARIAL SOCIETY OF AMERICA, 303 Seventh Avenue, New York City.

AMERICAN INSTITUTE OF ACTUARIES, 720 N. Michigan Ave., Chicago, Ill.

AMERICAN INSTITUTE OF MARINE UNDERWRITERS, 99 John Street, New York City.

AMERICAN LIFE CONVENTION, Omaha, Neb.

AMERICAN MARINE INSURANCE SYNDICATES, 99 John Street, New York City.

ASSOCIATION OF CASUALTY & SURETY EXECUTIVES, 1 Park Ave., New York City.

ASSOCIATION OF LIFE INSURANCE PRESIDENTS, 165 Broadway, New York City.

BOARD OF UNDERWRITERS OF NEW YORK, 99 John Street, New York City.

CASUALTY ACTUARIAL SOCIETY, 99 John Street, New York City.

NATIONAL ASSN. OF LIFE UNDERWRITERS, 11 W. 42nd Street, New York City.

NATIONAL ASSN. OF MUTUAL CASUALTY COS., 60 E. 42nd Street, New York City.

NATIONAL ASSN. OF TRAVELERS' AID AND TRANSIT SERVICE, 1270 Sixth Ave., New York City.

NATIONAL BOARD OF FIRE UNDERWRITERS, 85 John Street, New York City.

NATIONAL BUREAU OF CASUALTY & SURETY UNDERWRITERS, 1 Park Ave., New York City.

NATIONAL COUNCIL OF COMPENSATION INSURANCE, 45 East 17th St., New York City.

NATIONAL FIRE PROTECTION ASSN., 60 Batterymarch, Boston, Mass.

SURETY ASSN. OF AMERICA, 60 John Street, New York City.

TRAVELERS' AID SOCIETY, INC., 144 East 44th St., New York City.

DIVISION XI

AGRICULTURE AND ALLIED INDUSTRIES

CONDITIONS IN AGRICULTURE

By Arthur P. Chew

United States Department of Agriculture

INCOME, PRICE, AND PRODUCTION FACTORS

Farmers in the United States earned about 10 per cent more gross income in 1937 than in 1936 despite sharp declines in prices toward the end of the year. The Department of Agriculture estimated in December that the gross farm income would be nearly $9,000,000,000. Crops were the largest in many years. Cotton production (18,746,000 bales) was an all-time record. Wheat production at 887,000,000 bushels gave a substantial surplus for export. Corn production was 2,651,000,000 bushels, as compared with only 1,500,000,000 bushels in 1936.

This large production would have brought very low prices had not the previous year's drought reduced the carry-overs of foods and feeds and reduced the number of livestock on farms. Even so, farm product prices in November were the lowest since June, 1936. Cotton sold at the lowest prices in more than four years, wheat dropped below a dollar a bushel in terminal markets, and livestock prices declined. It was again evident that in years of normal weather the farmers can produce more than the market can be depended upon to take at reasonable prices.

Farm-commodity prices were relatively high in the first half of the year as an aftermath of the 1936 drought, and the cash farm income, including Government payments for soil conservation (which as stated amounted to nearly $9,000,000,000), was about 87 per cent of the average for the predepression period 1924–29. With Government payments left out of the reckoning the income was about 82 per cent of the predepression average. This income had a buying power equal to that of the predepression years. Prices of the goods and services that farmers commonly buy were about 14 per cent lower in 1937 than they were in the period 1924–29. Specifically, the cash farm income in 1937 had about the same purchasing power as $10,000,000,000 had in the period 1924–29. Agricultural debt charges, taxes, and wage costs were lower also. Allowance for these additional factors raises the agricultural purchasing power of 1937 to a point slightly above the 1924–29 level.

Comparison of the 1937 income with the predepression average, however, makes the present farm situation look better than it really is. Farmers were not prosperous from 1924 to 1929. Farm-commodity prices were then well above the pre-war level; but non-farm prices were relatively much higher. This disparity was a constant source of agricultural distress. Moreover, farm-land values were declining, farm-mortgage debt was very burdensome, and farm taxes were high. After meeting the expenses of production, and paying interest and taxes, the farmers had not much left for themselves. It should be borne in mind, also, in comparing the 1937 farm income with that of the predepression years, that the farm population is larger now; hence, the farm income must be spread over more people.

Nevertheless, the recovery in the

last five years has been remarkable. In 1932, when the depression was at its worst, the cash farm income was only $4,328,000,000. This may be compared with $10,479,000,000 in 1929. From 1932 to 1936, inclusive, the total climbed steadily by nearly $1,000,000,000 a year. Likewise, the value of the products retained for consumption on the farm increased. It was about $1,500,000,000 in 1937, as compared with less than $1,000,000,000 in 1932. In 1934 and 1936 droughts made the distribution of the farm income very unequal. Farmers in the drought areas earned little, while farmers elsewhere earned far more than usual. With production large in most of the leading crops, the farm income in 1937 was spread more evenly throughout the country. More farmers had more income than in any year since 1930.

FARM CREDIT CONDITIONS

Farm recovery appears also in a lessened demand for farm-mortgage financing of an emergency character, lessened delinquency in mortgage payments, and a lower volume of outstanding short-term loans. When farmers must borrow, they can do so on better terms; lending agencies both public and private have reduced their interest charges, and the real and personal property that farmers can pledge as security for loans has risen in value. The increase in farm incomes, coupled with the decrease in interest charges, has reduced the proportion of the gross farm income that must be set aside for debt service.

Foreclosures and other types of distress transfer of farm property during the depression brought about a heavy liquidation of debt, but it was not a desirable kind of liquidation. Farm-mortgage indebtedness dropped one-sixth from Jan. 1, 1930, to Jan. 1, 1935; in total it declined from $9,214,278,000 to $7,645,091,000. This meant, of course, that great numbers of farmers had lost their farms. Those still struggling on had difficulty in obtaining new loans or extensions of old loans. The Federal Government stepped in with two kinds of relief —one designed to restore the farmers' income and the other to provide new credit facilities. Each form of assistance contributed to the ensuing improvement in credit conditions, but the proportions cannot be determined.

Gains in farm income aided farmers to meet their outstanding obligations, and reduced their need for emergency financing. Even so, there was a heavy demand for refinancing. New loans by the Federal Land Banks and the Land Bank Commissioner totaled $1,283,503,000 in 1934, the peak year. In 1935 the new-loan total dropped to $445,067,000, and in 1936 to $186,428,000. This was the reflection of a reduced demand. In 1936 the applications to the Federal Land Banks and the Land Bank Commissioner totaled only 84,030, as compared with 162,968 in 1935 and 502,470 from May 1 to Dec. 31, 1933.

Farmers are putting new loans to new uses. In 1933, 1934, and 1935, according to a report by the Federal Land Banks, the main purpose of the loans granted by the Federal Land Banks and the Land Bank Commissioner was to liquidate long-term and unsecured indebtedness. Loans intended for long-term liquidation in those years absorbed 71.3 per cent of the total, and 17.5 per cent went to settle unsecured indebtedness. Only four per cent financed the purchase of farms. In 1936 the use of loans to liquidate long-term indebtedness declined slightly, the use of loans to refinance short-term debt declined considerably, and the use of loans for land buying jumped to 14 per cent of the total. Moreover, the percentage of loans with payments in arrears dropped. In 1933 no less than 53.2 per cent of the Federal land-bank loans were delinquent. By Jan. 1, 1937, the percentage had been reduced to 22.5.

GRAIN AND COTTON CROP CONDITIONS

Following the drought of 1936, the year 1937 began with a widespread lack of moisture in the Wheat Belt, with food supplies below normal, and with a feed shortage that necessitated reductions in the numbers of

hogs and chickens on farms. Notwithstanding the importation of large quantities of feed grain, reserves on farms were lower than in any season in many years.

Local continuation of the drought reduced crops and delayed farm recovery in Montana and the Dakotas, in Nebraska, western Kansas, and eastern Colorado, and in parts of Oklahoma and Texas. Though the area affected was much smaller, the loss of crops and the failure of pastures from drought in parts of these States were about as complete as in 1934 or 1936. However, there was less livestock to be liquidated, and the livestock that had to be sold brought good prices.

Outside the persistently dry area, much of which still lacked adequate moisture in November, the season was favorable. In the Cotton Belt a light infestation of boll weevils and favorable growing and harvesting weather gave record yields. On a moderate harvested acreage (about 34,000,000 acres), the yields averaged one-half of a bale per acre as compared with a normal average yield for the United States of about one-third of a bale per acre. In fact, cotton in 1937 yielded about 16 per cent more per acre than in any preceding year.

The production of other crops, though less remarkable, was generally favorable. Excluding cotton, about the usual total acreage was harvested. Composite yields per harvested acre (excluding cotton) were about five per cent above the 10-year (1923–32) average. There was about an average crop of wheat, large production of nearly all other food crops, a slightly above average crop of tobacco, and about an average production of feed and fodder. Pastures and ranges were above average nearly everywhere except in the drought areas.

The acre yield of wheat was rather low; this was in part the result of poor moisture conditions left by the 1936 drought. The price of wheat was encouraging, and wheat usually fares better than corn under drought conditions. Wheat growers therefore sowed a record acreage; but continued drought in some areas caused a heavy loss of acreage and reduced the average yield for the country. Production was slightly above the 1928–31 predrought average and much larger than that of any of the past five years. Despite a continued lack of moisture in parts of the main Wheat Belt, growers planted another very large acreage in the fall.

There was a large production of rye, rice, beans, peanuts, tree nuts, canning vegetables, and fruits for drying and canning. These large crops will tend to increase the carry-overs into the 1937–38 season and the exports. Part of the above-average 52,000,000-bushel rye crop will be used for feed. Part of the large 1,277,000-bushel peanut crop will be crushed for oil.

FRUIT AND VEGETABLES

Crops of fresh fruits and vegetables were large and caused serious marketing problems. Portions of the lower grades were not utilized. The potato crop, indicated to be a little over 390,000,000 bushels, was about five per cent above the 1928–32 average, and represented an ample but not seriously excessive supply per capita. Sweet potato production, at 74,000,000 bushels, was 11 per cent above average, and the price was low.

The apple crop was estimated at 211,000,000 bushels, more than one-fourth larger than the average. Part of the apple crop was not picked, because prices were low. The production of apples, peaches, pears, grapes, cherries, plums, prunes, apricots, and cranberries combined exceeded that of 1936 by approximately 48 per cent and exceeded the five-year (1928–32) average by approximately 21 per cent. Production of fall and winter oranges and grapefruit was above average, and the total harvest of walnuts, pecans, almonds, and filberts was more than 40 per cent above average.

THE COTTON PROBLEM

Foreign growths have displaced a substantial amount of American cot-

ton in world mills in recent years; and cotton exports have decreased proportionately. This development is of great importance to the United States, and successful adjustment to it requires a correct analysis of the causes. Production of foreign cotton now exceeds the production of American cotton. In 1936, when the world's production of all growths amounted to about 30,800,000 bales, only 40 per cent of the total was American. In the 10 crop years ended in 1932–33 the American proportion of the world's cotton averaged 56 per cent. Since then the consumption of cotton has increased greatly throughout the world, and many countries have striven to profit from the increased demand. This would have cut into the American share in any case; but certain special influences, notably the difficulty foreign countries have in getting dollar exchange, have given foreign cotton an advantage in the world market.

Among the forces that have stimulated the consumption of foreign at the expense of American cotton in the last decade or so must be included the disposition of cotton-consuming countries to buy cotton where they could sell manufactured goods in exchange. This country's high tariff made it practically impossible for them to do so here. Accordingly, as supplies became available they turned to Brazil, Africa, and India for larger quantities. Moreover, cotton growers at home and abroad vary their cotton acreage, not only in response to past cotton prices and cotton incomes, but in response to credit conditions, production costs, and the prices of alternative crops. In recent years cotton has been more profitable than coffee in Brazil and than grains in India, Egypt, and Argentina. In some countries cotton acreage has expanded for reasons quite unrelated to the price or supply of American cotton.

It seems improbable that this country will regain its former proportionate share in the world's cotton trade; but it may win back a greater total export trade in cotton than it has ever had before. Cotton consumption is increasing, despite the competition of rayon and other synthetic textile fibers. Better conditions in international trade might increase the consumption immensely, perhaps in directions as yet scarcely entered upon. There is a huge potential demand for cotton clothing, which will become actual as purchasing power rises. Certain of the newer cotton-growing countries will probably themselves supply the increase in their domestic demand; but even in Europe economic recovery will mean more consumption of cotton, and presumably some increase in the demand for American growths. It does not follow, because world competition in cotton is increasing, that the United States must resign itself to a constantly diminishing cotton trade.

The Administration believes the retention of our place in the world's cotton market will require vigorous action along two lines: first, and most important, toward improved international trade relationships, and a more liberal attitude by the United States itself toward imports; and second, toward a rational crop adjustment, which will correctly balance price against volume so as to give the largest net farm income. In the long run the world price of cotton will be determined by the total world supply and demand relationship. Cotton acreage adjustment in the United States should be a flexible, changing adaptation to the changing domestic and world market situation, with allowance for the necessity of selling abroad each year something like 40 per cent of the cotton crop.

Loans have their place in cotton policy; but used for any length of time to keep the domestic price of cotton above the world price, they have two bad results: (1) the Government acquires a huge supply of cotton in loan stocks that constitute a weight on prices of American cotton, and (2) American cotton does not move freely into the export trade because foreign cotton, unaffected by such loans, can be had at a lower price. The 10-cent cot-

ton loan of 1933 helped to give farmers rather than speculators the advantage of the subsequent rise of prices, and the 1937 nine-cent loan should check the price decline. Nevertheless, such loans are stimulants. They may do harm if overused or used in the wrong way. High loans necessitate rigid control of production; otherwise the Government exposes itself to a heavy loss. Then, as the American proportion of the world's production declines, it takes more curtailment of our acreage to produce a given increase in the world price.

There are limits, the Administration recently declared, beyond which the adjustment of cotton production cannot be pressed. These limits also influence the amount that can prudently be advanced in cotton loans. Conversely, with the capacity of the cotton-growing industry far above the profitable demand, there are limits to the profitable acreage. Continued unrestricted production would mean very low prices. Too little and too much production may be equally disastrous. The South should strive to keep its place in the world's cotton market without swamping it periodically. The South needs increased production of home food and feed crops, stimulation of cotton consumption within the United States, continued moderate adjustment of production, continued soil conservation and soil building, and conservation payments including price-adjustment payments to the co-operating producers.

WHEAT ADJUSTMENT QUESTION

Normally, unless the United States States reduces its wheat acreage below any probable level, there will be an exportable surplus in this country. It will consist chiefly of hard red winter and white wheats. Any adjustment program that may be undertaken by the Department of Agriculture can affect prices only to the extent of the differentials between United States prices and prices abroad. It cannot have any material effect upon world prices, because the United States produces less than one-fourth of the world wheat crop. Any loan program applied to wheat must take this fact into consideration. The amount of the loan must be determined in the light of world conditions, as well as in the light of conditions within the United States.

Wheat producers in the United States cannot expect to receive parity prices over a period of years, unless they reduce their acreage to domestic requirements or unless the Federal Government subsidizes wheat growing more than it has done heretofore. Domestic requirements can be met on about 55,000,000 seeded acres. That is 25,000,000 acres less than the area seeded for the 1937 crop; it is 12,000,000 acres less than the average for the 1928–32 period. Adjustments drastic enough to place the United States wheat crop on a domestic basis do not seem practicable, and any attempt to make them would probably dislocate the farming system in wheat areas.

The recommended policy would aim to produce enough for domestic requirements and about 50,000,000 bushels for export. That would require on the average about 60,000,000 seeded acres. With seedings held to that level, the ever-normal granary could stabilize the supplies and avoid burdensome carry-overs. Any area in excess of 60,000,000 seeded acres over a period of years would probably cause the accumulation of surpluses and a recurrence of the conditions that faced the wheat farmer in 1932.

NEW FARM ADJUSTMENT LEGISLATION

Congress turned its attention once more to crop adjustment. In August, when it became clear that the country would have a tremendous cotton crop, the Administration provided a new cotton loan, and Congress agreed in a joint resolution (Public Res. 69, approved Aug. 24, 1937, 50 Stat., page 754) to make farm legislation the first order of business at its next session. Presi-

dent Roosevelt called a special session in November. Secretary of Agriculture Wallace recommended moderate adjustment of both cotton and wheat production. This country, he explained, could not demand parity prices for wheat and cotton, and at the same time hold its place for these crops in the world's markets. Both Houses of Congress in the special session had before them the bills authorizing concerted crop regulation, and providing for an "ever-normal granary." At this writing the bills were in conference.

American agriculture is largely an export industry. It depends on foreign markets to absorb a considerable proportion of its output of cotton, tobacco, wheat, pork products, dried fruits, and other commodities. The Administration contends that there is no danger of a domestic shortage that cannot be obviated by maintaining an ever-normal granary, and believes crop adjustment involves no threat whatever to the domestic consumer. It involves, however, the delicate question of determining to what degree production for export may be limited without jeopardizing our competitive position in international trade.

Export trade at any price, Secretary Wallace argues, is not good business; in other words, production for sale at less than cost, with concomitant loss of soil fertility, should not be continued in mere desperation. On the other hand, panicky withdrawal from export trade is not desirable. Adequate soil conservation measures, accompanied by adjusted, low-cost production, may enable American agriculture to hold its place in world markets more effectively than it could through blind and reckless competition associated with alternate gluts and shortages.

Our agricultural production, in many important lines, tends normally to overflow the domestic market and to bring prices determined in strenuous international competition. Our agricultural plant is more than adequate in man-power, in equipment, and in soil productivity to satisfy the total demand, foreign and domestic. Therefore the continuing agricultural problem, the Administration holds, is to prevent low prices abroad from beating down the return for all that the farmer produces. This problem it would attack by assisting the farmer to stabilize his production regionally and nationally. Agricultural programs must be judged, it holds, by the effect upon farm income and national income. This is not synonymous with their effect on prices for income may be sacrificed through over-emphasis on price stabilization.

It is fundamental that agriculture should provide adequate supplies of food and fiber for the nation and for such foreign trade as can be obtained, and the possibilities in the foreign market should not be underestimated. Moreover, permanent agricultural prosperity implies a full utilization of our farming resources, consistent with the proper conservation of our human and material resources. It follows that the coercive restraint of production should only be a last resort. Cotton, some types of tobacco, and certain other products depend so heavily on export outlets that to restrict their production excessively would be unwise. Such action would not keep up the prices of these commodities for any length of time, and would turn the world market over more and more to foreign producers. Then it would be necessary to restrict production in this country still more.

GOVERNMENT LAND PLANNING

Through wise land planning this country with its low ratio of population to natural resources may escape the hardships that other countries have suffered. Consumers need not fear an actual land shortage for the growth of population is slowing down, and much of the land available is still but little used. True, there is none to waste. All the good free or cheap land has been appropriated, and much land that was good formerly has been spoiled. Yet, with a rational allocation of land resources among the major uses, enough will be available to provide for our maxi-

mum probable population, and to maintain forests, wild-life refuges, and parks. But it is necessary to effect a better adjustment between soil-spending and soil-saving, and to put land to the right uses as dictated by physical, economic, and social conditions.

Three fundamental purposes in land policy are complementary: (1) to maintain the income of farmers from efficient, properly adjusted production; (2) to improve the land-tenure system and give land operators more security in their jobs; and (3) to safeguard resources. They are inextricably interwoven. Farm incomes must be maintained, or tenure reform will be impossible; and without tenure reform it will be difficult to conserve the soil. In a given area the system of land use involves the whole pattern of climate, soil, topography, and social institutions. Improvement requires more than the application of any single formula. Attention given exclusively to any one of the major factors, such as the physical treatment of the land, or the relationship of land users to landlords and creditors, would accomplish little if offset by neglect of the other factors. Soil conservation needs the support of stable farm-commodity prices. Tenure reform requires a whole series of legal and institutional changes, as well as a farm-income level compatible with better conditions for the underprivileged. This whole problem is a social responsibility, which demands the integrated application of different programs.

Land policy may seek to correct maladjustments in particular areas of submarginal farming, of extensive tax delinquency, of over-grazing, of excessive erosion, or of reckless forest destruction. But it does not suffice to do that alone. Such problem areas are not isolated sore spots. They are outcroppings of more general distress, or symptoms of disorder in the whole agricultural system. Bailing them out accomplishes nothing if the trouble will run into them again from the main pool or collect somewhere else. In dealing with local maladies we must treat the general maladjustments from which they come, just as in city slum removal it is necessary to increase the incomes of the slum population to prevent the slums from returning. The pathology of problem areas cannot be localized, and attempts to cure it independently of agricultural adjustment in general may shift it about, without lessening the total distress at all.

LEGISLATION OF 75TH CONGRESS, FIRST SESSION

In the First Session of the Seventy-fifth Congress a number of measures of importance to agriculture were passed. In the Agricultural Marketing Agreement Act of 1937 (Public No. 137, approved June 3, 1937) Congress re-enacted and amended the provisions relating to marketing agreements and orders in the earlier Agricultural Adjustment Act. It provided also for mediation and arbitration by the Secretary of Agriculture in certain types of disputes between co-operative associations of milk producers and the purchasers, handlers, processors, and distributors of milk.

Congress also passed the Bankhead-Jones Farm Tenant Act (Public No. 210, approved July 22, 1937); and also the Sugar Act of 1937 (Public No. 414, approved Sept. 1, 1937), which provides for the continuation until Dec. 31, 1940, of the sugar-quota system originally established under the Jones-Costigan Act in 1934 and authorizes conditional payments to growers of sugar beets and sugarcane who comply with specified standards relating to labor conditions, soil conservation practices, and marketing allotments. By an act (Public No. 328, approved Aug. 20, 1937) amending the Perishable Agricultural Commodities Act, Congress modified the procedures and penalties. It directed the Secretary of Agriculture (Public No. 399, approved Aug. 28, 1937) to formulate and keep current a program of provisions for the construction and maintenance in arid or semi-arid areas facilities for water storage and utilization. Congress passed legislation (Public No. 165,

approved June 28, 1937) to continue for another year the Federal Surplus Commodities Corporation as an agency of the United States under the direction of the Secretary of Agriculture.

COTTON AND GRAIN CROPS

By W. F. Callander

Chairman, Crop Reporting Board, Department of Agriculture

COTTON CROPS AND COMPARISONS

A United States cotton crop of 18,746,000 bales of 500 pounds gross weight was estimated for 1937 on Dec. 8. This would be the largest crop on record, and compares with 12,399,000 bales produced in 1936, 10,638,000 bales produced in 1935 and 14,667,000 bales, the 5-year average. (Average acreage and production, when mentioned, relate to the five years, 1928–32, inclusive; average yield per acre to the ten years, 1923–1932 inclusive.) The previous record crop was in 1926 when the United States produced 17,978,000 bales. The crop, over practically the entire belt, had an unusual continuously improving growing season, which accounts for an outturn larger than anticipated.

The production of lint cotton in Texas in 1937 was 5,230,000 bales in comparison with 2,933,000 in 1936, and an average production of 4,580,000 bales. Mississippi ranked next with 2,625,000 bales, compared with 1,911,000 in 1936, and 1,559,000, the average. Arkansas in 1937 produced 1,830,000 bales compared with 1,295,000 bales in 1936, and 1,352,000 bales, the average. In 1937 Alabama produced 1,610,000 bales compared with 1,145,000 bales in 1936, and 1,255,000 bales, the average. Georgia produced 1,490,000 bales in 1937 compared with 1,086,000 bales in 1936, and 1,241,000 bales, the average. Louisiana in 1937 produced 1,080,000 bales compared with 761,000 in 1936, and 745,000, the average. South Carolina produced 1,025,000 bales in 1937 compared with 816,000 bales in 1936, and 856,000 bales, the average. Oklahoma produced 825,000 bales in 1937 compared with 290,000 bales in 1936 and 1,109,000 bales, the average. In 1937 North Carolina produced 775,000 bales compared with 597,000 bales in 1936 and 752,000 bales, the average. California in 1937 produced 710,000 bales compared with 442,000 bales in 1936, and 200,000 bales, the average. Tennessee produced 640,000 bales in 1937 compared with 433,000 bales in 1936, and 479,000 bales, the average. Missouri in 1937 produced 370,000 bales compared with 308,000 bales in 1936, and 228,000 bales, the average. Arizona produced 280,000 bales in 1937 compared with 191,000 bales in 1936, and 128,000 bales, the average. In 1937 New Mexico produced 157,000 bales compared with 111,000 bales in 1936, and 90,000 bales, the average. Virginia produced 41,000 bales in 1937 compared with 33,000 bales in 1936, and 45,000 bales, the average. Florida in 1937 produced 40,000 bales compared with 31,000 bales in 1936, and 35,000 bales the average.

COTTON YIELDS

A record yield of 264.6 pounds per acre was estimated for 1937, which compares with 197.6 pounds in 1936, and 169.9 pounds, the 10-year average. In 1926 the yield was 192.9 pounds.

All the States produced yields per acre in 1937 greater than average, and Georgia, Tennessee, Alabama, Mississippi, Louisiana, New Mexico, and Arizona produced their highest on record. Excluding 1911, North Carolina made its highest yield on record; while Arkansas made its highest yield since 1882. In South Carolina larger yields were made only in 1920 and 1911; and Texas made its largest yield since 1912.

The estimated 1937 yields and average yields, respectively, by States, are as follows: Virginia, 306 and 270

pounds; North Carolina, 336 and 269 pounds; South Carolina, 292 and 208 pounds; Georgia, 270 and 176 pounds; Florida, 166 and 125 pounds; Missouri, 340 and 256 pounds; Tennessee, 316 and 197 pounds; Alabama, 294 and 172 pounds; Mississippi, 368 and 191 pounds; Louisiana, 333 and 192 pounds; Texas, 198 and 139 pounds; Oklahoma, 161 and 149 pounds; Arkansas, 287 and 188 pounds; New Mexico, 529 and 318 pounds; Arizona, 477 and 327 pounds; and California, 553 and 386 pounds.

COTTON ACREAGE

The acreage of cotton harvested in the United States was estimated on Dec. 8, 1937, to be 33,930,000 acres, which is 13 per cent greater than the 30,028,000 acres harvested in 1936, but 16.3 per cent less than the average acreage for the 5-year period. This acreage compares with 27,640,000 acres in 1935, 26,866,000 acres in 1934, 29,383,000 acres in 1933, and the average of 40,541,000 acres.

Increases were shown in all States, with the least expansion in Texas and Oklahoma, where only 9 per cent occurred. Increases in the South Atlantic and South Central States range from 11 per cent in Louisiana to 21 per cent in Virginia and 31 per cent in Florida. North Carolina increased 15 per cent; Alabama, 13 per cent; Tennessee, 17 per cent; Mississippi, 14 per cent; Arkansas, 12 per cent; and Missouri, 27 per cent. The greatest proportional increases over last season were in the irrigated areas of the Far West. California and Arizona showed an increase of 67 and 35 per cent, respectively. New Mexico had a 22 per cent increase. Abandonment of cotton acreage in 1937 was unusually light, being 1.3 per cent compared with 2.3 per cent, the 10-year (1927–36) average.

VALUE OF COTTON PRODUCTION

The total value of lint and seed from the 1937 cotton crop, based on prices paid to producers up to Dec. 1, was $948,298,000 compared with $947,797,000 for the crop of 1936. The 1936 price of lint cotton represents the local price on the 15th of each month from August, 1935, to July, 1936, weighted by the quantity sold during each month. The values stated above do not include the Government Agricultural Conservation Program payments. Of the 1937 value shown, $784,106,000 was accounted for by lint, and $164,192,000 by seed. Of the 1936 value, the lint accounted for $764,432,000 and seed $183,365,000.

The price of cotton lint for the 1937 crop (to Dec. 1) was 8.37 cents per pound compared with 12.33 cents in 1936. The cottonseed price per ton in 1937 was $19.69 and in 1936, $33.27.

GRAIN CROPS

The production of grain crops in 1937 increased sharply over the drought year 1936 but did not differ greatly from average. High yields were experienced in most sections of the country but low yields in much of the Great Plains area held down the national average. A record acreage of wheat was sown for harvest in 1937 and production, although far from being a record, was well above average. The corn crop was only slightly above average, although yields were high except in the drought area. Production of oats was slightly below average while barley production was only about three-fourths of average. Production of both rye and rice was well above the average, although buckwheat production was nearly 18 per cent below average. The total production of grain crops used primarily for human food—wheat, rye, buckwheat and rice—was 983,223,000 bushels in 1937, an increase of about 3 per cent over the 5-year average.

WHEAT

The 1937 wheat crop of 873,993,000 bushels was well above the quantity utilized in recent years for domestic consumption, leaving a balance of a little over 200,000,000 bushels for export and increase in stocks. It is estimated that about 90,000,000 bushels will be exported, about three-fourths of which will be hard red winter wheat and the remainder

white wheat from the Pacific Northwest. Production of hard red spring and durum wheat was about equal to domestic requirements. This would leave a carry-over at the end of the current crop year of about 205,000,000 bushels, which would exceed the carry-over in any of the past three years but would be much smaller than the crops during the period 1930–34, when they averaged 326,000,000 bushels.

The acreage of wheat sown for the 1937 crop was 81,362,000 acres compared with 73,724,000 acres seeded for the 1936 crop. The previous high record was the 77,440,000 acres seeded for the crop of 1919. Over 20 per cent of the acreage seeded was abandoned, largely because of drought and rust damage, but the 64,460,000 acres harvested has been exceeded only twice, in 1919 and again in 1921. The acreage harvested in 1936 was only 48,863,000 acres and the 5-year average was 60,138,000. Abandonment was above average throughout most of the hard red winter and spring wheat belts and in the Pacific Northwest.

The farm value of the 1937 crop was larger than that of the 1936 crop by about 35 per cent. The estimated average price for the 1937 crop was 99.4 cents per bushel, making the total value of the crop $869,140,000. In 1936 at the farm price of 102.6 cents per bushel, the crop was valued at $643,183,000. The farm value of the 1937 crop is the highest since 1928.

WINTER WHEAT

The winter wheat crop of 685,102,000 bushels was 32 per cent greater than the crop of 519,874,000 bushels produced in 1936 and 10 per cent above the average production of 623,220,000 bushels. In the central and southern Great Plains and in the Pacific Northwest the crop was seeded under adverse soil moisture conditions and abandonment was heavy. The North Central States had excellent early season prospects, but these did not fully materialize because of black stem rust which reduced yields, especially in Indiana, Ohio, Michigan, and local areas to the west and south. The acreage of winter wheat seeded in the fall of 1936 was 57,612,000 acres, compared with the average of 45,290,000 acres. This was the largest acreage of winter wheat of record, the former record being 51,391,000 acres sown in the fall of 1918. Of the acreage seeded in the fall of 1936, 18.5 per cent was subsequently abandoned. The percentage abandoned this year was less than in 1936 when 24.3 per cent of the sown acreage was abandoned, but considerably above the average of 12.6 per cent. The estimated yield per acre of winter wheat in 1937 on the acreage harvested was 14.6 bushels, compared with 13.8 bushels in 1936. The average yield per harvested acre was 15.2 bushels.

SPRING WHEAT

The 1937 crop of all spring wheat of 188,891,000 bushels was nearly 77 per cent larger than the 1936 crop of 106,892,000 bushels but was less than four-fifths as large as the average of 241,312,000 bushels. The acreage harvested in 1937 was 17,514,000 acres, compared with 11,176,000 acres in 1936 and the average of 20,414,000 acres. The seeded acreage of all spring wheat was 23,750,000 acres, compared with 23,959,000 acres in 1936. The seeded acreage was above the average of recent years, but over one-fourth of the seeded acreage was abandoned because of drought and rust.

In the Pacific Northwest, where a larger than usual acreage was seeded to spring wheat because fall moisture conditions prevented seeding of winter wheat, yields in 1937 were above average. Above average yields were also secured in Minnesota, but elsewhere in the main spring wheat area yields were below average due to a combination of drought, rust, and grasshopper damage.

The production of durum wheat in the three States for which separate estimates are made (Minnesota, North Dakota, and South Dakota) was 27,791,000 bushels, more than three times as great as the 1936 production of 8,073,000 bushels, but only

slightly more than one-half of the average of 53,687,000 bushels. The acreage of durum wheat harvested was 2,756,000 acres, compared with 1,538,000 acres in 1936 and the average of 4,775,000 acres. The acreage seeded in 1937 was 3,226,000 acres, compared with 3,555,000 acres in 1936. This is the seventh consecutive year in which drought has resulted in below average yields of durum wheat. The yield per harvested acre in 1937 was 10.1 bushels, compared with 5.2 bushels in 1936 and the average of 11.6 bushels.

The production of spring wheat other than durum was 161,100,000 bushels, compared with 98,819,000 bushels in 1936 and the average of 187,625,000 bushels. The area harvested was 14,758,000 acres, compared with 9,638,000 acres in 1936 and the average of 15,639,000 acres. About 28 per cent of the 20,524,000 acres seeded in 1937 was abandoned. The yield per harvested acre was 10.9 bushels, slightly above the yield of 10.3 bushels in 1936 but below the average of 12.6 bushels.

RYE

The 1937 production of rye at 49,449,000 bushels was nearly twice as great as the 1936 production of 25,319,000 bushels and nearly 30 per cent above the average of 38,212,000 bushels. In most of the North Central States both yield per acre and production were above average. North Dakota, ordinarily the most important rye producing State, was a notable exception. The acreage harvested in 1937 was 3,839,000 acres, compared with 2,774,000 acres harvested in 1936 and the average of 3,315,000 acres. The acreage seeded for all purposes in the fall of 1936 was 7,593,000 acres, an increase of about 17 per cent over the acreage sown in the preceding fall and was the largest acreage seeded in recent years. A considerable part of the increase was seeded primarily for use as pasture because of short feed supplies in the fall of 1936. The yield per harvested acre was 12.9 bushels, compared with 9.1 bushels in 1936 and the average of 12 bushels.

Even with lower prices, the farm value of the 1937 crop exceeded that of the 1936 crop by 66 per cent. The 1937 crop is valued at $34,030,000, based on an average price of 68.8 cents per bushel, while the 1936 crop was valued at $20,478,000 with an average price of 80.9 cents per bushel.

BUCKWHEAT

The production of buckwheat of 6,777,000 bushels in 1937 was 8 per cent above the 1936 production but 18 per cent below the average production of 8,277,000 bushels. Buckwheat production in the United States has been tending downward over a long period, and production in 1936 was the lowest of record. The acreage harvested in 1937 amounted to 427,000 acres, compared with 375,000 acres in 1936. The acreage harvested in 1936 was the smallest of record. The average is 568,000 acres. The crop made excellent vegetative growth during the growing season but yields turned out only slightly above average. The yield per acre in 1937 was 15.9 bushels, compared with 16.8 bushels in 1936 and the average of 15.7 bushels. Lower prices for this year's crop more than offset the increased production so far as total value is concerned. The 1937 crop is valued at $4,499,000, with a farm price of 66.4 cents per bushel, while the 1936 crop, with a price of 85.6 cents, was valued at $5,381,000.

RICE

The 1936 rice crop of 53,004,000 bushels (45 pounds rough) was the largest rice crop ever produced in the country. It was 8 per cent greater than the 1936 crop of 49,002,000 bushels and 27 per cent greater than the average production of 42,826,000 bushels. The yield per acre in 1937 of 48.5 bushels was slightly below the 50.6 bushels obtained in 1936 but well above the average of 43.2 bushels. The acreage harvested in 1937 was 1,093,000 acres, the largest of record except the 1,299,000 acres harvested in 1920. The 1937 acreage showed 13 per cent increase over the 969,000 acres harvested in 1936 and was 18 per cent above the average of 925,-

000 acres. In Texas, the weather at harvesting time was unusually favorable but heavy rains in October hindered harvest in Arkansas. Harvesting was also delayed by heavy rains in California and some loss of acreage occurred in that State. The farm price of rice declined from 83.7 cents per bushel for the 1936 crop to 66.9 cents per bushel for the 1936 crop. The 1937 crop was valued at $35,434,000 compared with $41,028,000 for the 1936 crop.

FEED CROPS

The combined production of the four feed grains—corn, oats, barley, and grain sorghums—in 1937, expressed in tons to allow for different weight per bushel, totaled 100,390,000 tons. This was an increase of about two-thirds over the production of 59,847,000 tons in 1936 and is slightly below the average of 100,462,000 tons. The greater part of the production of these crops is fed on farms, with only a relatively small quantity moving into commercial channels, hence farmers' incomes from these crops come largely from the livestock to which they are fed. Since the present number of livestock on farms is considerably below average, due at least in part to two recent years of short feed supplies, the large production of feed grains is expected to result in heavier feeding of livestock. Even allowing for this increased feeding, the carry-over of feed grains at the end of the current marketing season may be well above average.

CORN

The 1937 crop of 2,644,995,000 bushels was 76 per cent greater than the short crop of 1,507,089,000 bushels produced in 1936 and nearly 4 per cent above the average production of 2,554,772,000 bushels. These estimates include the grain equivalent of corn used for silage, forage, hogging off and pasturing, in addition to grain corn husked and picked. The total acreage of corn harvested for all purposes in 1937 was placed at 93,810,000 acres, only slightly above the 93,020,000 acres harvested in 1936 and 9 per cent below the average of 103,419,000 acres. It is estimated that 96,483,000 acres were planted in 1937, compared with 100,599,000 acres planted in 1936. Abandonment was above average in 1937 but not nearly so great as in 1936. The yield per harvested acre was 28.2 bushels in 1937, compared with 16.2 bushels in 1936 and the average of 25.4 bushels. Despite the reduction of yields by drought in such States as Nebraska, South Dakota, and Kansas, the national average was the highest since 1923. Yields were above average by more than 10 bushels per acre in Illinois and Indiana, and were well above average in such other important corn producing States as Iowa, Minnesota, Ohio, Michigan, and Pennsylvania. Yields were also above average in most of the Southern States and in the area west of the Continental Divide.

The amount of corn harvested as grain in 1937 was 2,343,258,000 bushels, compared with 1,253,766,000 in 1936 and the average of 2,191,960,000 bushels. The acreage of corn harvested for grain was 81,509,000 acres, compared with only 67,640,000 acres so harvested in 1936. The acreage of corn harvested for silage in 1937 was 5,140,000 acres, compared with 8,309,000 acres in 1936. The acreage of corn utilized for silage in 1936 was exceptionally large. Many corn belt farmers having silos used a larger than usual acreage of corn for silage in that year because of the low tonnage per acre. Moreover, large numbers of growers who did not have permanent silos made use of temporary silos in order to utilize the feed value of drought-stricken corn to the best advantage. With high yields in 1937, the acreage used for silage was sharply reduced. However, the production of silage amounted to 35,334,000 tons, exceeding the production of 32,419,000 tons in 1936 by 9 per cent.

Production of all corn in the North Central States in 1937 was 100 per cent of the 5-year average; in the North Atlantic States, 129 per cent; in the South Atlantic States 125 per cent; in the South Central States,

109 per cent; and in the Western States 63 per cent.

Despite the sharp increase in production, the farm value of the 1937 crop was below that of the 1936 crop because of a marked decline in the farm price. The 1937 crop was valued at $1,456,907,000, with a price of 55.1 cents per bushel, while the 1936 crop with a farm price of 104.5 cents per bushel was valued at $1,574,256,000.

OATS

The production of oats in 1937 of 1,146,258,000 bushels exceeded the 1936 production of 785,506,000 bushels by 46 per cent but fell 6 per cent below the average production of 1,215,102,000 bushels. The acreage of oats harvested for grain in 1937 was 35,079,000 acres, an increase of 5 per cent over the 33,370,000 acres harvested in 1936 but 12 per cent below the average of 40,015,000 acres. The acreage of oats sown in 1937 was 37,101,000 acres, which was a reduction of 5 per cent from the acreage sown in 1936. The yield per acre harvested in 1937 was 32.7 bushels, compared with 23.5 bushels in 1936 and the average of 30.2 bushels. Yields were generally above average in all sections of the country except the Northeast, the Northern Great Plains, and Oklahoma and Texas. In the latter area yields were reduced by drought, which also caused a considerable abandonment of acreage Yields were especially high in such important States as Iowa. Illinois, Minnesota, and in the Pacific Northwest and the Southern States.

The farm value of the crop was only slightly above that of the preceding year, the increase in production having been largely offset by a decline in price. At the farm price of 31.3 cents per bushel, the value of the 1937 crop was $359,013,000, while the value of the 1936 crop was $352,837,000 at a price of 44.9 cents per bushel.

BARLEY

The 1937 production of 219,635,000 bushels was 49 per cent greater than the 1936 production of 147,475,000 bushels but 22 per cent below the average of 281,237,000 bushels. The area harvested in 1937 was 9,959,000 acres, an increase of 19 per cent over the 8,372,000 acres harvested in 1936 but about 21 per cent short of the average of 12,645,000 acres.

The yield per acre in 1937 was 22.1 bushels, compared with 17.6 bushels in the severe drought year of 1936 and the average of 22.6 bushels. Yields were below average in the important producing States of North Dakota, South Dakota, and Wisconsin as a result of damage from heat and drought, although in Minnesota, Iowa, and California yields were slightly above average.

The farm value of the 1937 barley crop was $122,090,000, compared with $115,681,000 for the 1936 crop. The farm price was 55.6 cents per bushel in 1937 and 78.4 cents per bushel in 1936.

GRAIN SORGHUMS

Production of grain sorghums in 1937 at 97,097,000 bushels was 76 per cent above the short crop of 55,079,000 bushels produced in 1936 and about equal to the average production of 97,760,000 bushels. The area harvested in 1937 was 7,379,000 acres, an increase of 7 per cent over the 6,878,000 acres harvested in 1936 and about 5 per cent above the average of 7,016,000 acres. The yield per acre was 13.2 bushels, compared with only 8 bushels in 1936 and the average of 14.7 bushels. Yields per acre were much higher than in 1936 in all States except California and Colorado. Approximately 37 per cent of the total grain sorghum acreage was used for forage in 1937 as compared with about 62 per cent so utilized in 1936. Equivalent grain production from this acreage is included in the above estimates. The farm value of the 1937 crop was $55,740,000 at an average farm price of 57.4 cents per bushel. In 1926 the price per bushel was 94.9 cents and the crop was valued at $52,250,000.

THE DAIRY INDUSTRY

By L. S. Richardson

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GENERAL

Dairy farmers fared better in 1937 than for several preceding years, and the year closed with prospects the most favorable since 1930. Total farm income from the sale of dairy products, in the first 10 months of 1937, was $1,243,000,000 as compared with $1,195,000,000 for the same period in 1936. This was an increase of $48,000,000 or about four per cent.

Production of feed grains and hay was larger in 1937 than the year previous, due largely to increased yields per acre; feed prices averaged decidedly less in 1937, and prices of dairy products were higher. In most general farming areas there was a tendency toward increased production of hogs, beef cattle, and veal, rather than milk, because of the favorable relations between meat prices and feed prices, with the result that dairymen had less competition from these branches of the farming industry.

COW NUMBERS AND MILK PRODUCTION

The number of milk cows was about 25,000,000 or the same as a year earlier, but still six per cent below the peak of four years ago. The number of milk cows per capita has declined steadily from the peak in 1934. In that year there were 213 milk cows for every 1,000 population, the highest ratio on record. In 1937 the ratio was 194 per 1,000. Estimates indicate that total milk production in 1937 was about the same as in 1936.

MANUFACTURED DAIRY PRODUCTS

The total production of manufactured dairy products in 1937, in terms of milk equivalent, was 2.3 per cent less for the first 11 months than in the same period of 1936. Most of the decrease was due to decreased production of condensed and evaporated milk.

Total production of creamery butter during the period from January to November, inclusive, was 1,501,084,000 pounds, a decrease of 1.3 per cent from the same period of 1936. Production for the full year will likely be the lightest for any year since 1930. Prices for the year averaged about 1½ cents higher than in 1936.

Cheese production in the first 11 months of 1937 was 586,491,000 pounds, or 2.6 per cent lower than in the same period of 1936. Except during the summer months, 1937 cheese prices were higher than in 1936.

Production of condensed milk in the first 11 months of 1937 was 228,799,000 pounds, or 3.6 per cent less than in the same period in 1936, whereas production of evaporated milk was 1,756,227,000 pounds or nine per cent lower than in 1936.

No definite figures are available for ice cream production in 1937, but reports indicate production to have been considerably larger than in 1936, when it was 243,551,000 gallons. Production of ice cream declined 42 per cent from 1929 to 1933 and was the first marked decline in the 19 years for which records are available. From 1933 there has been a steady increase, the 1936 total having been only four per cent below the peak in 1929. It is quite probable that 1937 production established a new high for the industry.

STORAGE STOCKS AND IMPORTS

At the close of 1937, reserve stocks of manufactured dairy products were relatively light. Butter in cold storage on Dec. 1 amounted to 66,208,000 pounds, compared with 88,866 000 pounds a year earlier, and a 1932–6 average for Dec. 1 of 83,444,000 pounds.

American cheese stocks of 93,624,000 pounds were 5,000,000 pounds less than on Dec. 1, 1936, but some 6,-

500,000 pounds above average; this comparison, however, must take into account the apparent tendency to carry heavier stocks of this product than in former years. Manufacturers' inventories of evaporated milk were reported as 218,372,000 pounds on Dec. 1, about 60,000,000 pounds less than a year earlier, but 30,000,000 pounds above the five-year average. As in the case of cheese stocks, the above average stocks of evaporated milk must not be taken to mean that current stocks are particularly burdensome.

In December, 1936, over 1,000,000 pounds of foreign butter were imported, and there had been a fairly active movement in other months during the last half of 1936. Of the total 1936 imports of butter, amounting to 9,874,000 pounds, more than half arrived after Aug. 1. Official import statistics for 1937 are available through October only, but 9,000,000 of the 10,365,000 pounds imported up to Nov. 1, came in before June 1. Foreign arrivals during the last half of 1937 were small.

CONSUMPTION OF DAIRY PRODUCTS

The trade output or consumption of butter in the first 11 months of 1937 was 1,505,970,000 pounds, an increase of 1.8 per cent over the same period of 1936. Retail prices of butter near the close of 1937 were about nine per cent higher than in the previous year, indicating an increase of about 14 per cent in consumer expenditures for butter. Cheese consumption for the 11-month period was 643,225,000 pounds, an increase of 0.5 per cent over 1936. Consumption of condensed milk was 226,280,000 pounds, a decline of 2.1 per cent. Consumption of evaporated milk was 1,776,008,000 pounds, an increase of 4.3 per cent. Consumption of ice cream is estimated at from five to ten per cent higher than in 1936, probably a new high for the industry.

The trend in fluid milk consumption has been upward since 1934, and it is estimated that 1937 consumption was nearly as high as the peak in 1929. Cream consumption was still decidedly below the pre-depression level.

CONTROL AND REGULATORY PROGRAMS

During the last few years there has been an increase in public regulation of milk production and marketing, some regulations representing an effort to benefit dairymen financially, and others aimed to secure more healthful city milk supplies.

By the fall of 1937, some 19 States had adopted laws providing for the regulation and control of milk distributors in the buying and selling of fluid milk and cream. In general, these laws provided for licensing milk distributors and fixing prices of milk and cream. Federal regulation of the handling of milk is now in effect in 22 milk markets, the principal feature of these programs being the regulation of prices paid producers by handlers. There are also in effect Federal marketing agreements covering dry skim milk and evaporated milk.

The soil conservation program has been in effect two years. Dairy farmers qualify for payments under this program by diverting land from soil-depleting to soil-conserving crops and by adopting soil-improvement practices. The soil conservation program probably will encourage some degree of shift from the production of feed grains to hay, pasture, and soil-improving crops. The increase in the production of roughage will tend to offset the reduced quantities of feed grains and reduce the cost of milk production.

Both the Federal and state governments have recently been more active in the control of diseases of dairy cattle. The bovine-tuberculosis program has been greatly expanded, and significant progress has been made in the control of Bang's disease. The short-time effect of disease-elimination programs is to hold in check the numbers of cows kept for milk on farms. Over a longer period of time these programs should result in greater efficiency of operation and lower costs of production.

DAIRY HERD IMPROVEMENT

In the fall of 1936, the Bureau of Dairy Industry inaugurated a program for recording the identity, family history, and production records of all animals in dairy herd-improvement associations. This program is the outgrowth of 30 years of cow-testing association work and 19 years of research by the Bureau in the breeding of dairy cattle. The Bureau's breeding experiments had demonstrated that the surest and quickest way to develop strains of uniformly high producing cattle is by the use of a good proved sire in each successive generation.

To apply the proved-sire system of breeding on a large scale among the average herds of the country it seemed advisable to start a concerted effort to find large numbers of good proved sires, that is, sires that have demonstrated through their progeny that they transmit uniformly high levels of production. The dairy herd-improvement associations, with their 490,000 cows and 17,000 bulls, afford a promising source of production records for proving large numbers of sires.

Accordingly, the Bureau arranged, with the co-operation of the state dairy extension services, to file a record of the identity and production performance of every animal in these association herds. Production records on every daughter of each association sire, and on the dams of the daughters, are now being filed with the Bureau as rapidly as they are available and tabulated automatically to prove the sires of the daughters. In the first year of operation, some 1,500 association bulls have been listed as "proved" by the records of at least five daughter-dam comparisons.

With complete and accurate information on all cows and bulls in these associations available for study, it should be possible to make a genetic analysis of many individual herds in the near future. Such studies will enable members of dairy-herd-improvement associations to center their breeding program around animals and strains of known merit.

IMPROVED QUALITY OF DAIRY PRODUCTS

No country in the world excels the United States in the general quality of its dairy products, yet there is still room for improvement in the quality of the milk and cream produced on many farms in this country. Dairy leaders all recognize that poor quality not only fails to attract new consumers but that it tends to discourage regular consumers. Maintenance of a high standard of quality in all dairy products is perhaps the most important factor in maintaining or increasing consumption. Research is supplying the essential information, and the Federal and state extension services are making gradual progress in bringing about the adoption of practices that assure good quality. This has been particularly true in the last few years with respect to the production of cream for butter making. Nearly all States are doing some quality-improvement work; many of them now have cream-grading laws, and creameries are paying a premium for good quality.

DISEASES OF PLANTS

By Howard Austin Edson

Bureau of Plant Industry, Department of Agriculture

PREVALENCE OF FUNGOUS DISEASES

Generally speaking, fungous diseases of plant foliage were unusually prevalent in 1937. January was characterized by excessive rainfall in the eastern United States, amounting to 400 per cent of normal in western Kentucky and southeastern Missouri, but gradually diminishing from that center over an irregularly expanding area to normal in northern New Eng-

land and the southern portion of the Gulf States. While February precipitation was so distributed as to tend to equalize rainfall in the east, and March provided only from 30 to 85 per cent of the normal amount in the States east of the Kansas-Nebraska line except in New England, Florida, and Louisiana, the average precipitation for the three-month period January–March was above normal throughout the United States except in Texas, Oklahoma, North Dakota, Montana, and Washington, where it ranged from 90 to 97 per cent of normal. April rains were also excessive in the three northwestern States, and in all States east of the Kansas-Nebraska line except Tennessee, Arkansas, Mississippi, and Louisiana. Temperatures in January, while low in most western sections of the country, were abnormally warm east of the Mississippi River. In the northeastern States the mean temperatures ranged from 10 degrees to 14 degrees above normal. Moderate temperatures prevailed rather generally in February and also in March, except in the lower Mississippi Valley westward to New Mexico. These climatic conditions advanced vegetation abnormally and at the same time fostered the early development of downy mildews, seedling parasites, leaf spots, and many other fungous diseases.

DOWNY MILDEWS

Downy mildew of tobacco, *Peronospora tabacina,* was observed in Georgia seed beds Jan. 25 where it was apparent that it had already been active for two or three weeks. With the progress of the season it became almost universal in seed beds throughout the tobacco areas of States where it had previously been known to occur, and in addition was found for the first time in Indiana, Connecticut, and Massachusetts.

Spinach downy mildew (*Peronospora effusa*) assumed commercial importance in trucking areas in Texas and was locally destructive in Arkansas and troublesome along the Atlantic coast as far north as Long Island.

Onion downy mildew (*Peronospora destructor*), lettuce downy mildew (*Bremia lactucae*), cabbage downy mildew (*Peronospora parasitica*), lima bean downy mildew (*Phytophthora phaseoli*), hop downy mildew (*Pseudoperonospora humili*) were all generally prevalent. Potato downy mildew (*Phytophthora infestans*), more familiarly known as late blight, was generally active and frequently caused losses in the western and northern areas of its range if uncontrolled by spraying or dusting. Another downy mildew (*Basidiophora entospora*) was reported from Texas as causing 30 per cent destruction in a commercial field of the China aster (*Callistephus hortensis*). This appears to be the first occurrence of a downy mildew on this host in the United States.

POWDERY MILDEWS AND OTHER VEGETABLE DISEASES

Powdery mildews appeared early and developed in profusion on a wide variety of plants. Black rot (*Bacterium campestre*) was prevalent and destructive on cabbage, cauliflower, collards, and other related crucifers. Both early and late blights of celery (*Cercospora apii* and *Septoria* spp.) were widely prevalent and the cause of much loss. Leaf spots of tomato, particularly early blight (*Alternaria solani*) and *Septoria* leaf spot (*S. lycopersici*) caused unusually severe injury over wide areas from Massachusetts to Virginia and westward to Iowa. The losses due to the defoliation caused were frequently estimated at 50 per cent of the prospective record crop through the exposure of the green fruit to sun scald, and the shortened picking season occasioned by the failure of late fruit to set or to mature.

Other diseases of vegetables frequently encountered are carrot leaf blight (*Macrosporium carotae*), carrot leaf spot (*Cercospora carotae*), beet leaf spot (*Cercospora beticola*), potato early blight (*Alternaria solani*), bean halo blight (*Bacterium medicaginis* var. *phaseolicola*), bean blight (*Bacterium phaseoli*), cucurbit anthracnose (*Colletotrichum lagenarium*), cantaloupe leaf blight (*Macro-*

sporium cucumerinum), and bacterial wilt (*Bacillus tracheiphilus*) of cantaloupe, cucumber, and other cucurbits. Two other vegetable diseases of much economic importance elsewhere, cabbage yellows (*Fusarium conglutinans*) and tomato verticillium wilt (*Verticillium albo-atrum*), were found in Florida this year for the first time.

Curly top, a virus disease of sugar beets, tomato, beans, and many other vegetable crops, was again serious in the Far West and Northwest. This disease is transmitted from diseased to healthy plants by an insect vector, the beet leafhopper (*Eutettix tenellus*). Its range is accordingly limited to that of the insect, and its relative prevalence from year to year is roughly correlated with that of the vector. It has, in the past two years, became serious on spinach in southwestern Texas, and the so-called "brittle root" disease of horseradish observed in recent seasons in the vicinity of East St. Louis, Ill., is now believed to be identical with curly top.

GRAIN RUSTS AND SMUTS

The true rusts were very abundant on both wild and cultivated plants. Among the more important commercially were bean rust (*Uromyces phaseoli typica*), apple cedar rust (*Gymnosporangium juniperi-virginianae*), quince rust (*G. clavipes*) on apple, crown rust (*Puccinia coronata*) of oats, and leaf rust (*P. rubigo-vera*) and stem rust (*P. graminis*) of cereals. Corn rust (*P. sorghi*), while of little commercial importance except on sweet corn in a few instances, was more prevalent on maize than for many years. Cereal rusts probably constituted the most serious crop menace of the year. Space prevents analysis beyond the statement that very heavy losses were sustained in many States either locally or regionally, especially in the winter wheat sections of northwestern Missouri, central Illinois, and central Indiana, and in portions of the spring wheat area, while other sections and localities escaped disaster by a very narrow margin.

Grain smuts (*Ustilago and Tilletia* spp.) were more prevalent than usual on cereals and developed in alarming amounts in many portions of the Great Plains. Relatively high percentages of corn smut (*Ustilago zeae*) were general. In the aggregate this disease caused appreciable loss. There was an increase in the amount of bacterial wilt (*Aplanobacter stewarti*) on both resistant and susceptible varieties of sweet corn in the region from southern Connecticut to southern Maryland. Barley scab and wheat scab (*Gibberella saubinetii*) were locally destructive.

FRUIT DISEASES

Among fruit diseases, apple scab (*Venturia inaequalis*), like many other fungi, was pushed into early development by climatic conditions which made it more than ordinarily difficult to control. Peach leaf curl continued to foster its spread, and (*Taphrina deformans*) was unusually prevalent on unsprayed orchards. Blight (*Bacillus amylovorus*) was almost universally present on pears, and occurred in conspicuous amounts on apple in some localities although, generally speaking, it was less serious on apple trees than in 1936.

COTTON SEEDLING DISEASES

Seedling diseases of cotton, due to various parasitic fungi both seed-borne and soil-borne, were unusually active and did much damage to cotton stands where untreated seed was planted. Under the conditions which prevailed, both as to climatic factors and the general presence of parasitic organisms in or on the seed, modern seed treatment was distinctly advantageous.

DUTCH ELM DISEASE

Substantial gains were made during the year in the fight on the Dutch elm disease (*Ceratostomella ulmi*). The number of diseased trees found in the heavily infected area extending 50 miles radially from New York City, dropped 25 per cent below last year's total. New infections along the boundary of this center were limited to single trees in Alexandria

township, Hamilton County, N.J.; Cornwall township, Orange County, N.Y.; and the town of Redding, Fairfax County, Conn. There has been no known spread to new territory, nor has the disease recurred in Baltimore, Brunswick, and Cumberland, Md.; Norfolk, Va.; or Cleveland and Cincinnati, O., where infected trees have been found in the past. In Indianapolis, where the disease has been known since 1934, closer scouting throughout a wider zone resulted in the finding of 32 diseased trees, all of which have been removed and none of which was located in the immediate vicinity of the original findings. The only previously undiscovered centers of infection brought to light were one diseased elm at Athens, O., and five trees at Wileys Ford, W. Va. These have all been removed. On Nov. 1 the Bureau of Entomology and Plant Quarantine, in charge of the Federal eradication program, reported total findings of 5,497 cases of infection this year as compared with 7,321 last year.

OTHER TREE DISEASES

Cypress canker, caused by a previously unknown fungus (*Coryneum cardinalis*), has been found on artificial plantings of Monterey cypress (*Cupressus macrocarpa*) over about two-thirds of the area of California, and threatens the existence of this famous tree species. The only living natural stands of Monterey cypress are comprised in two natural groves on the Monterey peninsula itself. These have not yet been infected, but the disease has been rampant within a few miles of them on ornamental and windbreak plantings of the species. A concerted effort is being made to check the further spread of the canker.

A disease of persimmon, caused by *Cephalosporium sp.*, has appeared in half the persimmon stands on some 1,500 square miles in central Tennessee. It spreads rapidly and all trees in groves thought to have become infected in 1933 or 1934 are now dead. In adjacent areas 80 per cent of the trees are dead and the remainder infected.

INSECT PESTS AND PLANT QUARANTINE

By Lee A. Strong

Chief, U. S. Bureau of Entomology and Plant Quarantine

ORGANIZATION OF BUREAU ACTIVITIES

The organization of the Bureau activities has continued along substantially the same lines as during the previous year. The special investigations begun in 1936 with allotments from processing taxes collected in Hawaii and Puerto Rico were concluded. As in 1936, activities concerned with the eradication and control of plant pests were materially expanded by allotments of emergency funds for relief. These activities included gypsy moth control, browntail moth control, Dutch elm disease eradication, barberry eradication, white pine blister rust control, citrus canker eradication, phony peach disease control eradication of peach mosaic, elimination of wild cotton in southern Florida, and the destruction of Thurberia plants in southeastern Arizona.

Camps operated by the Civilian Conservation Corps have co-operated in the control of certain insect pests and plant diseases. The active projects of a few camps have been directed entirely toward the control of such pests, including the gypsy moth in the New England States, and toward the eradication of the Dutch elm disease in New Jersey. Some camps have co-operated in the control of grasshoppers and the Mormon cricket. Others have engaged in the control of insect pests in forests.

FRUIT PEST RESEARCH

Certain nicotine combinations, particularly nicotine bentonite, have

continued to give encouraging results in field and laboratory for control of the codling moth on apple. One form of this material is being tested on a semi-commercial scale in southern Indiana. In the Pacific Northwest phenothiazine has continued to give outstanding control of the codling moth.

During the summer of 1936 a study was undertaken of the insects that infest peach orchards where the phony peach disease is found under conditions of natural spread. In order to carry on this work a mobile research laboratory has been installed in a trailer of the usual tourist type. In less than eight months in 1936 this laboratory traveled more than 10,600 miles and collected 3,709 lots of insect material from peach orchards at 60 locations in 11 States. In the spring of 1937 a second unit was purchased and equipped for use in a survey of peach orchards in areas affected by the peach mosaic disease in the southwestern States.

TREE BEETLES

Of a number of water soluble compounds tested against the peach borer, dichlorethyl ether has given a very high degree of control when applied in February and March. This material has also given promise for use as a soil fumigant against the plum curculio.

For the first time in many years the eastern spruce beetle reached outbreak proportions in several areas in New England and New York. On the recommendation of the Bureau the land-managing agencies have work under way to control this outbreak on some 22,000 acres in the Green Mountain National Forest and adjacent privately owned lands. Work on insect carriers of the Dutch elm disease was continued both at Morristown, N.J., and at Oxford, England. The work at Morristown had previously established beyond doubt that the European elm bark beetle is a frequent vector of this disease and it is also now known that the native elm bark beetle can and does perform the same function.

The most general and severe Mormon cricket infestation in history occurred during the year. It included parts of Montana, Wyoming, Colorado, Utah, Nevada, Idaho, Oregon, and Washington and small areas in North and South Dakota.

GRAIN PEST INVESTIGATIONS

The loss resulting from European corn borer attack was higher in 1936 than in any previous year, owing in part to the increased value of the corn crop. A second generation of borers appeared in significant numbers in the Great Lakes area previously considered as a 1-generation area. Investigations of inbred lines of field and sweet corn show several of both types carrying marked resistance. The corn ear worm hibernated successfully considerably farther north in the winter of 1936–37 than in the previous winter, and as a consequence it appeared much earlier and in greater abundance in 1937.

The hessian fly was at a low ebb as a result of unfavorable climatic conditions. A number of additional varieties of wheat have been discovered to have some resistance to the hessian fly. An extensive armyworm outbreak occurred during the year in a number of States, being most severe early in the spring in Mississippi, Arkansas, and Oklahoma, but extending late in the spring to Illinois, Missouri, Kansas, and the more northern States.

Progeny of alfalfa plants selected for resistance to the pea aphid have been increased, so a field test of resistant selections of alfalfa was possible in the Antelope Valley in California. Surveys discovered previously unknown infestations of the alfalfa weevil in South Dakota, western Nebraska, Colorado, Oregon, Utah, and Wyoming.

VEGETABLE PESTS

Experiments with sulphur and copper compounds for the control of the potato leafhopper on peanuts, conducted in co-operation with the Virginia Agricultural Experiment Station, have indicated that these materials are not only effective in reducing the leafhopper populations

but that they result in a stimulation to the plant which materially increases yield even when no leafhoppers are present.

It was found that the damage caused by wireworms to onions could be decreased greatly by the incorporation into the soil of 800 pounds of crude naphthalene per acre while the land was being plowed and during a time when soil temperatures were 70° F. or higher. Dilute solutions of dichlorethyl ether at a concentration of 5 cc of this material in one gallon of water were found to be highly toxic to wireworms when drilled into rows of beans.

Dust mixtures containing rotenone gave excellent control of the pea weevil in large-scale field tests performed in Idaho, Washington, and Oregon. The pea aphid continued to cause heavy loss to the pea growers in many of the major pea-producing sections of the country, particularly in Maryland, Wisconsin, western New York, and Ohio. Particularly good results were obtained with a derris or cube dust mixture containing a specially prepared spreading agent. Timely applications of a derris dust mixture containing 0.5 per cent rotenone protected the cabbage crop adequately against the common species of cabbage worms.

As a result of a survey made in Texas, approximately 2,700 square miles were added to the known breeding areas of the beet leafhopper. Leafhoppers from this area have been primarily responsible for the curly-top epidemics which have been prevalent in the spinach fields of Texas. The known breeding areas of the beet leafhopper in this section now occupy approximately 10,700 square miles north of the Rio Grande in New Mexico and Texas, in addition to the unknown extent of adjacent areas in Mexico.

TOBACCO AND COTTON

Flea beetles could be controlled in tobacco plant bed as well as on newly set plants and on the growing crop by timely applications of dust mixtures containing rotenone, with sterilized tobacco dust as the diluent. Dust mixtures containing 1.0 and 1.5 per cent rotenone, respectively, were much more toxic and gave a higher degree of control of the flea beetles than the dust mixtures containing 0.5 per cent rotenone. Experiments in closed tobacco warehouses in Virginia showed that dusting with pyrethrum was a very effective method of combating the adults of the tobacco moth. A reduction of approximately 97.5 per cent in the population of this insect was obtained in warehouses where this method of control was employed.

The year 1936 was notable because of the comparatively small amount of damage caused by the boll weevil to cotton, the losses by this insect having been less than during any year since 1925. Although in most areas the weevil mortality was low during the winter of 1936–37, conditions in the early season of 1937 were not particularly favorable for the weevils and at midsummer the prospects were that 1937 would be another light boll weevil year, except in areas in the north Atlantic States and in eastern Texas. Mixtures of calcium arsenate and sulphur used for boll weevil control have in some experiments given greater gains in the yield of seed cotton per acre than undiluted calcium arsenate. These increased yields result from additional control of the cotton flea hopper and other hemipterous insects by means of the sulphur.

The cotton leaf worm made its appearance in southern Texas early in May, 1936 and reached all cotton States except California before the end of the season. Although large quantities of arsenical poisons were used to control it, considerable damage was done in regions where it appeared early. Some regions were not reached until after the crop was mature, and the defoliation of the cotton plants greatly reduced the number of boll weevils to enter hibernation in the fall of 1936, which partially accounts for the light boll weevil infestations in many areas at the beginning of the 1937 season.

A distinct forward step in the control of screwworm flies has been in-

dicated by the results obtained in experiments with phenothiazine as a larvicide.

DOG-TICK, CATTLE GRUBS, MOSQUITOES, ANTS

It was found that derris powder containing from one to three per cent rotenone was effective in killing all but the engorged females of the American dog tick and that derris powder and devil's-shoestrings containing approximately the same rotenone content was satisfactory in ridding horses and cattle of the winter tick.

Experiments with solutions of rotenone have yielded a simple and efficient method for reducing the abundance of cattle grubs.

An acetone solution of phenothiazine was known to be much more toxic for mosquito larvae than the undissolved material. Recently it has been found that the addition of a sulphonated petroleum oil reduces greatly the amount of acetone solvent required, while providing a combination that is readily miscible with water. In co-operation with the Bureau of Biological Survey, the Emergency Conservation Work, and the state agencies concerned in mosquito control in Maryland, New Jersey, and Delaware, work was begun to assist the Civilian Conservation Corps camps to carry out more effectively the mosquito-control projects to which they were assigned in these States.

Numerous tests of methods to control fire ants (*Solenopsis spp.*), which are so destructive to young quail and otherwise injurious in the southeastern States, have shown that approximately 50 per cent of the fire ant colonies can be destroyed by applying a solution of sodium cyanide containing one ounce of the chemical to a gallon of water.

BEEKEEPING

Preliminary work indicates that with proper equipment, good management, stimulative feeding, and an early pollen supply, good colonies in the South can produce at least 20 pounds of package bees in one season.

With the co-operation of the Vanderbilt Medical School, it was found that vitamin E is not present in royal jelly. The vitamin A and B contents are now being studied in a continuation of the endeavor to find why queen and worker become differentiated from each other.

Beekeeping in the Sierra Nevada and Cascade Mountains has been subject to serious losses by bears. With the co-operation of the Zoology and Agricultural Engineering departments of the University of California, an electric fence charged from a battery has been devised and, when a good ground was provided for the electric current, has worked successfully in keeping bears out of apiaries.

Work was begun on testing various races and strains of bees for resistance to American foulbrood by the inoculation of colonies with definite dosages of the causative organism.

Studies of the lethal effect on bees of arsenicals used as insecticides show that a dose containing only 0.05 to 0.10 microgram of elemental pentavalent arsenic is sufficient to cause a significant shortening of life. The work also indicates that calcium arsenate ($Ca_3(As_4)_2$) is somewhat more toxic to bees than acid lead arsenate ($PbHAsO_4$).

Studies on two different commercial strains of the Italian bee reared in this country showed one to be approximately twice as good as the other in honey-storing ability, and also to be definitely superior in amount of brood reared and in drawing out foundation.

FOREIGN PARASITE INTRODUCTION

Attention has been given during the year to obtaining European parasites of the hessian fly for colonization in the United States. Investigations of parasites of the European corn borer were limited to Italy, where collections for *Chelonus annulipes* Wesm. were made. A total of 85,000 host larvae were shipped late in 1936. Extensive shipments of pea weevil parasites were made during the summer of 1936 from

France and Austria. A total of 5,600 *Triaspis thoracicus* Curt. were obtained from 400 pounds of infested horse beans shipped from France. In addition 30,000 adults of the same species were shipped from Austria.

NEW INSECTICIDE DEVELOPMENTS

Studies on the chemistry of pyrethrum flowers have been continued. One of the objects of these studies is the isolation of pure pyrethrin I and pure pyrethrin II in order that their relative insecticidal efficacies can be studied. The question of the presence of nicotine and other alkaloids in species other than *Nicotiana tabacum* was further investigated. It was discovered that *N. sylvestria* contains 1-nornicotine. This plant is the only known source of this alkaloid which is more toxic than nicotine and hence is of interest as an insecticide.

Fifty-six organic compounds were found that showed promise against some of the seven leaf-eating species used for test purposes. It has been shown that nicotine is more effective when used under dry than under humid conditions, as was formerly supposed.

A special cardiographic camera has been developed for making permanent records of the volume and amplitude of the insect heart beat. With this apparatus it is possible to study the effect of various types of insecticides or pharmacological compounds on the insect heart. This apparatus opens a new field of investigation.

In studies on digestion and absorption in the southern armyworm, it has been found that pyrethrum, which is an excellent insecticide against many insects, loses its toxicity in the digestive tract of the larvae, whereas rotenone, the main toxic constituent of derris root, passes through the digestive tract with toxicity against mosquito larvae practically unchanged.

Fumigations of vetch seed against the vetch bruchid, applied in the ordinary refrigerator car under commercial conditions, have given a complete kill.

Methyl bromide has been tested on loads of 25 bushels or more of green string beans packed in hampers and was found to be effective in killing the Japanese beetle at the center of the package at concentrations of one and a half to two pounds of methyl bromide per 1,000 cubic feet of space without injury to the beans.

During the year it was shown that the low-temperature treatment for the Mediterranean fruit fly could be applied by cooling the fruit in a precooling plant on shore and holding it at a temperature of 34° F. or slightly below that temperature for the required 12 days in the hold of a ship in transit.

JAPANESE BEETLE

In the older areas of infestation the emergence of adult Japanese beetles began somewhat earlier in 1936 than in 1935 but did not reach a peak so quickly. There was a general increase of beetle abundance within the New York City metropolitan area, and a continuance of large areas of severe injury in north-central New Jersey, eastern Pennsylvania, and, to a modified extent, in southwestern New Jersey, with the development of very serious injury in northern Delaware, northeastern Maryland, and extreme southeastern Pennsylvania. In southern New England the population showed a definite increase in 1936, as compared with 1935. There was, on the other hand, a general decrease in injury in the older infested area in the general vicinity of Philadelphia.

Trap captures recorded during May and June, 1937 included one beetle at Atlanta, Ga.; 160 beetles at Greensboro, 126 at Winston-Salem, 36 at Spencer, 35 at East Spencer, and small captures in five other communities in North Carolina; eight beetles at Marietta and three at Gallipolis, Ohio; seven beetles at Charlottesville, Va.; and two beetles at Charleston, S.C. The find at Atlanta, Ga., was a first record.

FRUIT FLIES

In the lower Rio Grande Valley of Texas few Mexican fruit flies were taken before the first of the year. In January, however, it be-

came apparent that there were many more flies in the area than during any previous season. Early in March the condition changed radically. Relatively few flies were trapped but larval infestations were found in all districts. In April the fly population again mounted and the number of larval infestations decreased. In May only a small amount of infested fruit was found during the tree-to-tree inspection work, and none was discovered in June.

PHONY PEACH DISEASE AND PEACH MOSAIC CONTROL

The phony peach disease was found for the first time in Pennsylvania and Indiana, in one county each. Nearly 13,000,000 peach trees in commercial plantings and home orchards were inspected in the fiscal year and 140,844 trees infected with the disease have been removed from 6,633 properties.

Activities of the Department to eradicate peach mosaic have resulted, since the project was started, in materially reducing the intensity of infection in many of the affected commercial peach-growing areas. In Utah all known infected trees have been removed. In Colorado approximately 3,000 infected trees were found and destroyed during the 1937 spring inspection. During the year 27,486 infected trees were removed and nearly 3,600,000 trees were inspected for the disease.

GYPSY MOTH AND BROWN-TAIL MOTH CONTROL

The regular funds have been supplemented by allotments from the Works Progress Administration. Work was continued in Vermont, Massachusetts, and Connecticut by men detailed from Civilian Conservation Corps camps, principally between the barrier zone and the Connecticut River. In spite of the numerous difficulties experienced since work in Pennsylvania was started, excellent progress has been made and the situation looks more hopeful each year. Defoliation caused by the gypsy moth in the summer of 1936 was less extensive for the infested area as a whole than it was the year before. The total reported area showing from slight to complete defoliation was 428,622 acres, a reduction of 112,147 acres from the total area defoliated in 1935.

DUTCH ELM DISEASE ERADICATION

Results of the year's campaign encourage the belief that the Dutch elm disease can be eradicated from the United States. A nominal increase in extent of the infected zone may be attributed in great measure to increased scouting activities and more thorough coverage. Larger and better trained forces of scouts were in the field considerably earlier in the foliar season than in 1935. Particular attention was paid to clear-cutting operations in swampy districts and to railroad scouting. (See "Diseases of Plants," p. 444–447.)

WHITE PINE BLISTER RUST CONTROL

During the field season 1936, 4,404,066 acres were protected by removing *Ribes* bushes; of these, 3,340,179 acres consisted of initial work, and 1,063,887 consisted of areas covered one or more times previously since 1918. This work involved the destruction of 203,217,239 *Ribes* and required 1,075,621 man-days of labor.

In the Lake States, counties in which pine infection was found for the first time in 1936 included five counties in Michigan; 10 counties in Wisconsin; and two counties in Minnesota. During the same year it was found on *Ribes* for the first time in six counties in Wisconsin, and in one county in Minnesota. During the period from Jan. 1 to June 30, 1937, further counties reported for the first time with infections on pine included five counties in Wisconsin. The principal development in the West was the tentative delimiting of the infection in California, which was first discovered on June 26, 1936. The surveys including and immediately following this discovery showed the presence of blister rust in Del Norte County on one sugar pine near Monumental and on one *Ribes* on Rowdy Creek; also in Siskiyou County on several sugar pines and *Ribes* on In-

dian Creek, and on two *Ribes* on Goff Creek and the Applegate River, respectively. Surveys in Oregon carried out at the same time showed sugar pines infected in Coos, Curry, Jefferson, and Lane Counties; western white pine infected in Curry and Lane Counties; white bark pines infected in Hood River and Clackamas counties; and *Ribes* infected at several points in Curry County and on Clear Creek in Josephine County. Blister rust occurs generally on *Ribes* in the northwestern quarter of Oregon, which was not included in this survey.

In the Inland Empire region of Idaho, eastern Washington, and western Montana, a pine-disease survey initiated in 1935 was continued in 1936 on a large scale. In the territory scouted it was found that 6.8 per cent of the pines examined were infected on the St. Joe, 4.3 per cent on the Coeur d'Alene, 6.4 per cent in the Kaniksu, 8.5 per cent in the Cabinet, and 2.8 per cent in the Mt. Spokane forest areas.

GRASSHOPPERS

The annual grasshopper survey conducted in the fall of 1936 in cooperation with the States indicated that one of the most widespread grasshopper infestations ever known was in prospect. Developments during the spring and early summer of 1937 fully justified this estimate. Congress made $1,000,000 available for grasshopper control late in April..

BLACK STEM RUST CONTROL

During the year, 91,710,896 barberry bushes were destroyed on 9,147 properties in the 17 States participating in the barberry-eradication program. Since the beginning of the barberry eradication program in 1918, nearly 24,083,000 bushes (mostly *Berberis vulgaris*) have been destroyed in the 13 States that comprised the original control area, and an additional 124,102,230 bushes have been destroyed in Missouri, Pennsylvania, Virginia, and West Virginia since 1935, when similar work was undertaken in these States. There was very little evidence of stem rust overwintering in Texas and northern Mexico during the winter of 1936–37. Late in March and in April, however, rust developed rapidly in northern Mexico, and more or less sporadically in Texas. By May 30 there was from 35 to 50 per cent rust on the winter wheat in the Bosque River Valley and 15 per cent in the area north of Dallas, Tex. In eastern Kansas, eastern Nebraska, and western and northern Missouri crops were heavy and succulent, and were from a week to 10 days late. Weather favored rust, with the result that serious damage occurred, particularly in late fields of the more susceptible soft-wheat varieties. Severe damage to winter wheat has occurred also in western and northern Illinois and in central Indiana.

PINK BOLLWORM CONTROL

The more important developments in the pink bollworm situation during the 1936 crop season were the find of a new infestation in the lower Rio Grande Valley in both Texas and Mexico; the finding of reinfestation in several additional counties in the Texas Panhandle after a lapse of several years; and no recurrence of infestation in northern Florida for the second consecutive crop season. An important phase of wild-cotton work was a survey made with an autogiro in March and April, 1937. The autogiro was loaned to this project by the Dutch elm disease project. An area of some 1,900 square miles was covered during the survey, and as a result 24 new locations capable of sustaining wild cotton were located.

FOREIGN PLANT QUARANTINES

The Division of Foreign Plant Quarantines is engaged in the enforcement of quarantines and regulatory orders of the Department prohibiting or restricting the entry of various plants and plant products into the United States and, in addition, the enforcement of such domestic quarantines as affect the movement of plant material between the Territories of Hawaii and Puerto

Rico and continental United States. During the year, 20 foreign plant quarantines and regulatory orders, eight domestic plant quarantines, and four miscellaneous regulatory measures were enforced.

TRANSIT INSPECTION

A heavier movement of nursery stock than has been experienced in recent years was reported by transit inspectors in the spring of 1937. Inspection was carried on at 18 of the more important railway centers of the United States throughout the year. During the year 1,250,000 package shipments and over 250,000 carloads of nursery stock and other restricted materials were inspected for compliance with certification requirements of Federal quarantines relating to interstate movement. In addition 547,000 waybills were checked to determine whether the shipments carried materials the movement of which is restricted by these quarantines.

FISHERIES

By Charles E. Jackson

Deputy Commissioner of Fisheries, Department of Commerce

GENERAL

The fiscal year 1937 was one of considerable activity among commercial fishing interests. Sales of such important items as canned salmon and California sardines were unusually large and the previous year's heavy production of these products was practically exhausted at the end of the year. The Government purchase of surplus cold storage fish, which had accumulated as a result of the mild winter on the East Coast, relieved the market of dangerously large stocks of frozen fish, and assisted in stabilizing the frozen fish industry. In general, prices for fishery products were maintained or increased during the year, and the total income of the fishing industry is believed to have been considerably larger than that for recent previous years.

The increased building of new fishing craft, modernization of gear and the installation of new and modern equipment for processing fishery products which took place on both coasts reflect the optimism felt by the fishing industry toward the future.

Data not made available until 1937 indicate that sport fishing, particularly along the sea coast, reached an all time high during the year 1936. Anglers spent $8,002,887 for angler's licenses in the United States, an increase of $993,878 over the amount spent in the previous year.

FISHERIES OF THE UNITED STATES AND ALASKA

Section and Year	Fishermen	Fishing vessels	Fishing boats	Catch	
	Number	Number	Number	Pounds	Value
New England States, 1935	18,449	621	9,080	655,430,000	$17,984,000
Middle Atlantic States, 1935	9,620	391	5,081	279,438,000	6,416,000
Chesapeake Bay States, 1935	19,116	287	12,731	265,827,000	5,524,000
South Atlantic and Gulf States, 1934	24,898	740	14,398	447,914,000	9,994,000
Pacific Coast States, 1935	20,583	1,041	6,110	1,676,236,000	23,089,000
Lake States, 1934	7,579	490	3,070	96,411,000	5,124,000
Mississippi River and Tributaries, 1931	15,884	—	14,546	82,383,000	2,897,000
Alaska, 1935	9,208	845	3,989	648,710,000	9,093,000
Total	125,337	4,415	69,005	4,152,349,000	$80,121,000

ALASKA FISHERIES

The primary objectives of the Bureau of Fisheries in Alaska are to conserve the salmon and other fisheries, and to protect and maintain the fur-seal herd of the Pribilof Islands.

The fisheries of Alaska during 1936 employed 30,383 persons, of which 11,722 were fishermen. The catch in round weight, exclusive of whales, amounted to 923,528,817 pounds, valued at $13,891,412. The round weight of whales could not be determined, but their products amounted to 8,813,875 pounds, valued at $334,461. Of the total catch, exclusive of whales, 726,853,292 pounds, valued at $11,856,541, consisted of salmon; 194,125,352 pounds, valued at $1,882,603, consisted of other fish; and 2,550,173 pounds, valued at $152,268, consisted of shellfish.

There were 249 establishments (exclusive of duplication) engaged in the fisheries of Alaska in 1936; of these, 131 canned fish, 121 cured fish, 18 manufactured byproducts, and 58 handled fresh and frozen fishery products.

The output of these establishments amounted to 523,652,534 pounds, valued at $50,455,272. The salmon industry was by far the most important and produced 424,481,160 pounds, valued at $46,496,222. The herring industry was next in importance with a production of 74,188,120 pounds, valued at $2,075,632. The halibut industry ranked third and produced 13,719,340 pounds, valued at $958,304. Of the remainder, whale, clam, shrimp, and crab products were most important in value.

FUR SEALS

The fur-seal herd of the Pribilof Islands is by far the largest in the world. This herd, together with others of the North Pacific Ocean, is protected from capture at sea by the Convention of July 7, 1911, between the United States, Great Britain, Japan, and Russia. Under this protection and the careful management of the Bureau of Fisheries experts, this herd has grown from 130,000 in 1911 to about 1,840,000 animals in 1937. During these years there have been taken 768,772 fur-seal skins for manufacture. There were 55,180 skins taken in 1937. Only the skins of 3-year-old surplus males are taken. The herd under this system has been increasing at the rate of about 8 per cent annually. The rehabilitation of the Pribilof Islands fur-seal herd is an outstanding example of what may be accomplished in conservation through international co-operation.

FISH CULTURE

The Federal fish hatchery system produced and distributed during the year ended June 30, 1937, 7,919,000,000 fish and eggs. This is a slight recession from the 8,171,000,000 produced during the previous year. The reduction in output applied to several species of Pacific salmon, Atlantic salmon, lake trout, brown trout, rainbow trout, and to interior species such as pike, perch, sunfish, etc. Increases were registered for the important shad and whitefish, large- and small-mouth bass, and two marine species—the haddock and pollock.

Artificial propagation of lobster was resumed after a lapse of several years.

The production of fingerlings (larger fish ranging to legal size) totaled 136,000,000. Over 130,000,000 of the production consisted of game fishes; the remainder were commercial and semi-commercial species.

There were operated during the year 85 separate fish cultural units in 37 States. One new hatchery was constructed.

Rescue and salvage operations in the Upper Mississippi Wild Life Refuge were conducted along the usual lines. Seining crews removed over 50,000,000 fish from the overflowed areas in this region along the Upper Mississippi River.

TECHNOLOGY

This section of the Division of Fishery Industries of the United States Bureau of Fisheries carries on investigations dealing with the production, utilization, and preservation of fishery products. Scientific studies are made on the principles of canning, salting, smoking, dehydration

and refrigeration, the nutritive value of fish and shellfish, and the manufacture and uses of fishery by-products. During the past year, further methods of fish cookery and canning were developed, studies made of fish spoilage, rancidity in fish, and chemistry of fish proteins. Tests were devised for determining the relative freshness of cod and pollock, and the bacterial decomposition of fresh fish. Further investigations were made to develop disinfectants for sponges, likewise in the preparation and extraction of oils from fish livers and salmon cannery waste, and in the manufacture of fish meal for animal feeding and fish feeding.

SALMON RESEARCH

The program of biological investigations by the Bureau of Fisheries followed three major lines of endeavor: (1) population studies of commercial and game fishes to devise methods of managing or controlling the fisheries so as to maintain a self-sustaining level of abundance; (2) management of interior waters for the purpose of improving methods of hatchery procedure, formulating productive stocking policies, and improving environmental conditions in streams; and (3) developing more effective methods of shellfish culture.

While continuing its long-term program of investigation on various fisheries, the scientific staff has made significant achievement in several distinct but concurrent lines of research. Studies of the Pacific salmon fishery, over which the Bureau has regulatory power in Alaska, have provided important information for the management of the resource. Observations on the red-salmon runs of the Karluk River have contributed much to the fundamental knowledge on which effective regulation of the commercial fishery is based. During the year a report on the causes and extent of the decline in abundance of the sockeye salmon of the Puget Sound–Fraser River region was completed. These statistical and biological data assume special importance in relation to the treaty recently concluded between the United States and Canada for the preservation of this seriously depleted fishery. In the Columbia River area a scientific basis for the proper regulation of the fishery is being established through the collection of statistics, surveys of physical and biological conditions in the Columbia Basin, and studies of the size, seasonal occurrence, and distribution of the spawning runs. These widely divergent phases of the salmon investigations are integral parts of a broad program of conservation.

CONSERVATION STUDIES

Because of the migratory habits of the shore fishes of the middle and south Atlantic region, the division of jurisdiction among many States, and the interstate traffic in the products of the fishery, the comprehensive study and effective control of any of these fisheries are beyond the power of a single State. The scientific and economic studies of the Bureau therefore provide an essential basis for conservation policies designed to arrest the evident depletion of several important species and indicate the need for interstate control of these fisheries. Comprehensive studies of the conservation problems of two important fisheries, scup and weakfish or squeteague, were completed during 1937, and observations on the new and rapidly growing winter trawl fishery off the Virginia Capes were continued. Evidences of depletion in this fishery due to destruction of undersized fish were discovered, and the practicability of modifying the size of the mesh in the trawls to insure release of such fish was investigated.

An outstanding development in relation to the Atlantic Coast fisheries was the initiation, late in the year, of a program of shad studies which will be continued over a period of several years. This once productive fishery has declined to barely one-fifth of its former poundage, and an inquiry into means of restoring the fishery and placing it on a sustaining basis of yield is an urgent necessity. Statistical and biological studies of the shad will be made along the At-

lantic Coast from South Carolina to Chesapeake Bay.

STREAM POLLUTION

The problem of stream pollution as it affects aquatic life has been the object of intense scientific study by the Bureau. Investigations concerning the toxicity of industrial effluents on aquatic life were continued during 1937 in 22 States, and some 60 major groups of effluents representing over 200 kinds of industrial wastes have been studied, assayed, and their components standardized. From these data a series of pollution studies is being published, providing standards for the detection and measurement of stream pollution, and in many instances prescribing remedial measures.

In the rapidly growing field of stream management the Bureau has had an intensely active role, and in several widely separated regions has been carrying out its operation of test streams under controlled conditions to determine ways and means of inducing such bodies of water to support large communities of game fish under enhanced fishing conditions. With complete control of actual stocking of streams by constant observations on stream conditions and from the catches of co-operating anglers, a highly accurate knowledge of the carrying capacity of streams has been gained. This type of research under natural conditions is contributing much to fundamental knowledge on which will be based the science of stream management in the future.

OYSTER CULTURE

The production of oysters of high nutritive value is at present the principal aim of oyster culture in the northern States. Studies on the storage of glycogen and of metals important in human nutrition, such as iron and copper, have received the Bureau's attention. The information being accumulated may eventually enable the oyster growers to produce a standard product of known chemical composition. Another service of great practical importance to the oyster grower was a survey of conditions during the spawning season in Long Island Sound, where the amount of "set" in any given year is uncertain. Predictions of the dates of spawning and setting enabled the oystermen to plant their shells at the most advantageous time and thus to get the full benefit of the crop of young oysters produced.

FORESTRY

By Charles E. Randall

United States Forest Service

RESTORATION OF FOREST RESOURCES

The rebuilding of public wealth in forest areas throughout the nation continued to be an important phase of national policy in 1937. In the program of reforestation of idle lands, Federal and State agencies combined in the greatest tree planting project in history. Management, development and use of publicly owned forest lands progressed at a rate commensurate with the forest devastation which occurred during the preceding century as the result of destructive logging and uncontrolled fires.

The general scope of forest management applies to approximately one-third of the entire land area of the United States. Restoration of the forest resources on public lands and the promotion of better management of timber holdings on private lands are the primary aims in the program of the United States Forest Service. Particularly in the fields of timber growing, fire control, wild life management, and development of recreational facilities, government forest officers made extensive progress during the year. Additions to the national forest system

brought the total area in National Forests under Federal administration in 1937 to 171,403,306 acres.

RECREATIONAL DEVELOPMENTS AND FACTORS

Many social and economic factors have combined to establish an increasing amount of leisure time available to American people for recreation. The number of outdoor recreationists entering National Forests increased from 3,500,000 in 1917 to approximately one-fifth of the entire population in 1937. Federal and State agencies are establishing extensive forest developments to provide for the increasing millions of people who are seeking recreation in the forest environment.

In the National Forests, camp and picnic grounds are among the most extensive recreational provisions made by the Forest Service. These developments range from roadside picnic spots accommodating a few persons to areas covering hundreds of acres. The availability of CCC workers has aided in the campground development program, and the numbers of improved camping and picnic grounds within National Forests reached a total of more than 6,000 in 1937. The need for house trailer accommodations has recently been recognized.

Improved facilities for forest recreation are of special value in fire protection, according to the Forest Service. The presence of camp and picnic grounds alleviates the promiscuous building of camp fires in areas where such public use exposes the forests to destruction by fire. The need for preventing pollution of water supplies and the disfigurement of road and trail sides by refuse have also added incentive to the recreational developments in National Forests where provisions are now being made for millions of people annually.

Another correlation between forest recreation and fire control is provided in the construction of dams for establishing artificial lakes. In this work abundant water is made available for fire fighting and a potential recreational area created where fishing and boating can be combined with camping. Hundreds of these small dams have been constructed. Scenic drives and woodland trails, used by tourists, provide accessibility to remote forest areas for fire suppression work. The construction of these transportation routes went forward rapidly in 1937.

FARM FORESTRY ACT

The fact that about 30 per cent of the Nation's forest land is in farm woodlands and that farms produce one-third of the country's wood, was recognized in the passage of the Farm Forestry Act during the 1937 session of Congress. Although no funds were appropriated for carrying out provisions of the act in 1937, the act authorized an annual appropriation of $2,500,000 to enable the Department of Agriculture to assist farmers in the management of their 150,000,000 acres of woodland.

Present timber production from farm woodlands is about one-third to one-half what it could be under good management. Because the American farmer lacks the traditional knowledge of good forestry practice which farmers have learned in other nations from years of strict regulations, Federal co-operation with farm owners in the development of improved forestry practices is contemplated. Farm woodlands not only have a value as a cash crop but are vital in soil and water conservation. The stabilization of localized wood using industries is another factor in the management of farm woodlands.

The act authorizes the production and distribution of forest trees and shrub planting stock in co-operation with State agencies. It also authorizes the Forest Service to make investigations, advise farmers regarding farm forests, and to enter into co-operative agreements for the establishment, protection and care of forest-land trees.

The promotion of better management of farm woodlands is considered to be part of a key attack on the loss of fertile agricultural soil by wind and water erosion. As a special project in 1937, CCC boys, under the di-

rection of forest officers, started work in selected farm woodlands on the development of demonstration areas in the methods of properly handling this timber.

FLOOD CONTROL

National disasters in the form of flood waters led to passage of the Flood Control Act of 1937 calling for upstream watershed treatment to supplement downstream engineering measures. For the first time in history the Congress authorized a co-ordinated land and water program of flood control on a nation-wide basis.

The extension of National Forests by the Federal purchase of additional land in critical watershed areas is part of an enlarged program of flood control. The restoration of such land to productive and permanent forest growth is a second step. Concurrently, investigation and research by the Forest Service and other agencies are determining the types of vegetative cover and forest land management most effective in watershed protection. It is becoming more widely recognized that forest and other vegetative cover on watersheds has an important influence on the volume and rate of water runoff and in the reduction of flood intensity. As funds become available the work of watershed protection will be extended by foresters as part of the national program of conservation.

WILD LIFE

Loggers, hunters, fishermen and fires have so altered the habitat and numbers of game animals and fish in the United States that activities in the field of wild life management have become an increasingly important part of forestry work. Co-operating with other agencies in this field, the Forest Service is conducting improvement work on trout streams, lake surveys, fish planting and improvement of the natural habitat of game birds and animals. Although still in the experimental stage, progress has been made in the raising and planting of game foods.

Information obtained as a result of lake surveys is giving accurate data on the species of fish to plant, the desirability of encouraging fur bearing animals, and the advisability of planting foods for waterfowl. An annual survey of game populations gives relatively accurate information on population trends and aids in establishing management policies.

Big game animals in the National Forests have increased 140 per cent in number during the past 12 years, according to latest estimates compiled by the Forest Service. A total of 1,684,000 big game animals range on 170,000,000 acres of National Forest land. Deer are the most numerous and widely distributed of the big game animals and total some 1,441,000 head. Next to deer, elk are the most prevalent. Black and brown bears show an increase over previous estimates, and the downward trend in moose populations seems to have been arrested.

FIRE

During 1937 the construction of additional roads, trails, telephone lines and lookout towers progressed rapidly in an effort to reduce losses from forest fires. In some parts of the country the tradition of annual woods burning carried on by local settlers in the belief that such burning improves forage for livestock grazing has been an important factor in the number of forest fires and acreage burned. Educational activities and extension of systematic control in these areas are gradually reducing the number of fires from this cause.

In the National Forests, considerable extension of transportation and communication facilities was accomplished during the year. A number of "fire danger stations" were installed. Scientific instruments strategically located in various ranger districts make it possible to determine the extent of existing fire danger. From this information can be predicted the probable size a possible fire will attain and the approximate rate of spread. With these data at hand desired precautionary steps can be taken.

In spite of the advances made in

the suppression and prevention of forest fires, one of the most disastrous fires of recent years occurred on the Shoshone National Forest of Wyoming during the summer of 1937. Fifteen persons lost their lives and 38 others were severely burned.

Up to October 1, a new low record for man-caused fires and acreage burned was established in 1937 on the 161 National Forests. At that date the acreage burned had been reduced more than 70 per cent from the annual average for the preceding five years. While 5,141 fires were caused by human agencies in the first nine months of 1937, the 1936 figure was 9,609 for a corresponding period.

REFORESTATION

An outstanding problem in reforestation of wasted timberlands is located in the north central States where the U. S. Forest Service concentrated about one-half of its tree planting activities in 1937. In that area are located the two largest forest tree nurseries in the world, at Chittenden, Mich., and Hayward, Wis. Reforestation work was also carried on actively in the deep South, and to a lesser extent in the Northeast and in several Western areas.

To re-establish timber growth on forest lands of commercial value, as well as for protection against soil erosion and floods, 215,000,000 trees covering approximately 220,000 acres were planted in National Forests in 1937. Under the terms of the Clarke-McNary Act, the U. S. Forest Service co-operated with state agencies in the distribution of 35,000,000 trees to farm owners for farm woodland, windbreak and shelterbelt planting.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Assn. of Nurserymen, P. O. Box 355, Louisiana, Mo.

American Country Life Assn., 105 E. 22nd Street, New York City.

American Farm Bureau Federation, 58 E. Washington St., Chicago, Ill.

American Forestry Assn., 1713 K St., N.W., Washington, D.C.

American National Livestock Assn., 515 Cooper Bldg., Denver, Col.

American Ornithologists' Union, 1939 Biltmore St., N.W., Washington, D.C.

American Phytopathological Society, Bureau of Plant Industry, Washington, D.C.

American Poultry Assn., Fort Wayne, Ind.

American Society of Agronomy, Iowa State College, Ames, Ia.

American Society of Animal Production, University of Nebraska, Lincoln, Neb.

American Society of Equity, 311 Daily Star Bldg., Minneapolis, Minn.

American Society for Horticultural Science, Lock Box 299, Geneva, N.Y.

American Society of Mammalogists, University of Michigan, Ann Arbor, Mich.

American Veterinary Medical Assn., 221 N. La Salle St., Chicago, Ill.

Association of Land-Grant Colleges and Universities, Newark, Del.

Boyce-Thompson Institute for Plant Research Inc., 1086 N. Broadway, Yonkers, N.Y.

Dairymen's League Co-operative Association, Inc., 11 West 42nd St., New York City.

Farm Women's National Congress, Clarksville, Ia.

Institute of American Meat Packers, 509 S. Wabash Ave., Chicago, Ill.

International Farm Congress of America, Continental Bldg., Kansas City, Mo.

Izaak Walton League of America (The), Merchandise Mart, Chicago, Ill.

JEWISH AGRICULTURE SOCIETY, INC., 301 E. 14th Street, New York City.

MIDDLE ATLANTIC FISHERIES ASSN., 203 Front St., New York City.

NATIONAL ASSN. OF AUDUBON SOCIETIES, 1775 Broadway, New York City.

NATIONAL BOARD OF FARM ORGANIZATIONS, 1731 I Street, N.W., Washington, D.C.

NATIONAL DAIRY COUNCIL, 111 N. Canal St., Chicago, Ill.

NATIONAL EDUCATIONAL AND CO-OPERATIVE FARMERS' UNION OF AMERICA, 1731 I Street, N.W., Washington, D.C.

NATIONAL FERTILIZER ASSN., 676 Investment Bldg., Washington, D.C.

NATIONAL GRANGE, 970 College Avenue, Columbus, O.

NATIONAL HIGHWAYS ASSOCIATION, Bass River, Cape Cod, Mass.

NATIONAL LIVESTOCK AND MEAT BOARD, 407 S. Dearborn St., Chicago, Ill.

NATIONAL POULTRY COUNCIL, Davisville, R.I.

PEOPLE'S LOBBY, INC., 113 First St., N.E., Washington, D.C.

SOCIETY OF AMERICAN FLORISTS AND ORNAMENTAL HORTICULTURISTS, Stevens Hotel, Chicago, Ill.

SOCIETY OF AMERICAN FORESTERS, 810 Hill Bldg., Washington, D.C.

UNITED STATES LIVESTOCK SANITARY ASSN., 33 Livestock Exchange Bldg., Wichita, Kan.

VEGETABLE GROWERS' ASSN. OF AMERICA, c.o. F. L. Allen Co., Philadelphia, Pa.

WOMAN'S NATIONAL FARM AND GARDEN ASSN., INC., 1928 Spruce St., Philadelphia, Pa.

DIVISION XII

MINERAL INDUSTRIES

GOLD AND SILVER

By Walter Renton Ingalls

Consulting Engineer, New York

THE ECONOMIC ASPECT OF GOLD

It is with temerity that anyone approaches the subject of gold in its economic phases. Controversy is avoided by restriction of an annual review to a summary of facts.

Great Britain, finding its gold reserves being depleted in 1932, departed from the international gold standard in order to let the value of the pound sterling decline in terms of gold and thus promote its position in export trade and become able to settle adverse balances with goods rather than with gold. In the United States in 1933 the value of gold was deliberately written up from $20.67 per ounce to $35, with the intention of thereby raising commodity prices. Incidentally this improved the book value of treasury assets.

The raising of the price of gold in the United States brought the exchange values of the dollar and the pound sterling into substantial harmony with pre-depression terms, and subsequently the franc was similarly adjusted. Substantial stabilization was desirable in the interests of exchanges in international trade. Consequently the American, British and French governments entered into agreements for the accumulation respectively of stabilization funds to maintain this position.

During 1937 the Japanese Government acted in respect of gold in the same way that the American Government had previously done, revaluing from five yen to 13 yen per momme. It provided for supervision of the gold output of the Empire and the purchase by the Bank of Japan of the entire gold production, prohibiting private ownership, etc. On June 30, 1937 the Bank of Japan's gold stock, valued at five yen per momme, amounted to 524,000,000 yen. The new rate of 13 yen resulted in a book profit of upward of 800,000,000 yen ($250,000,000).

Through these arrangements, decrees, etc., gold became to a large extent socialized. In the U.S.A. and in Japan it became illegal for anyone privately to possess any gold. In Great Britain and France the conditions did not become so arbitrary, but in both of them gold passed out of general circulation. In the depth of the depression people generally were selling securities, converting the proceeds into gold and hoarding the gold for their ultimate security. Dishoarding became compulsory in the United States.

It was also contemplated that the increased price for gold would draw supplies from the great hoards in India and would lead people to liquidate jewelry and ornaments. Both of these things happened on huge scales. In the meanwhile the production of newly mined gold, which had begun to increase in 1930, continued to increase. So the world entered 1937 with fears that it had too much gold. In the middle of the Spring such a thought began to crystallize into the apprehension that the value of gold would be lowered, which of course would be upsetting, and extensive dishoarding began in London.

A substantial dishoarding of gold, which occurred in the Fall of 1936, reflected an increased feeling of se-

curity in respect of currency relationships and the belief that investment opportunities were exceptionally attractive. The dishoarding in the Spring of 1937 occurred at a time of weakness and uncertainty in most of the stock markets. In so far as the proceeds of the sales of dishoarded gold came to the United States they were apparently not invested but were largely held idle on deposit with American banks. This movement was continued by rumors of impending reduction of the American gold price.

Economists who had deplored the arbitrary measures previously taken were unanimous in the opinion that, although mischief had been done, it would now be more mischievous to try to undo it. By the middle of 1937, however, there was general acceptance of the representations by the American and British fiscal agents that they had no intention of refixing the price.

GOLD IN THE FRENCH CRISIS

In the meanwhile France under a year of Socialist government had so impaired its internal economy that its stabilization fund was gone, and a crisis developed June 28, indicating the need for extensive economic adjustments in order to conserve the gold reserves of the Bank of France. In his first speech to the Chamber, the new Finance Minister revealed that in less than four weeks 7,700,000,000 gold francs had left the country, and the gold reserve had fallen from 158,000,000 ounces in 1933 to 125,000,000 ounces at the beginning of 1936, and to 69,284,000 ounces on July 1, 1937. By the last date the gold stabilization fund of 10,000,000,000 francs, set up in October, 1936 out of the devaluation profit, had practically all disappeared, presumably in foreign exchange settlements and representing in part a flight of capital from the franc.

GREAT BRITAIN'S STERILIZATION OF GOLD

On June 28, 1937, Sir John Simon, Chancellor of the Exchequer, announced that the British Exchange equalization fund on March 30, 1937, held 26,674,000 fine ounces of gold. These holdings were in addition to the 73,482,000 ounces of fine gold that the Bank of England held in its Issue Department as backing for its note circulation on that date. Thus the British Exchange fund on March 30, 1937 held $933,590,000 of gold in what corresponds to the U. S. Treasury's inactive fund. The American inactive fund on the same date was $332,862,332. It was voted in Parliament, June 28, 1937, to increase the British Exchange equalization fund by £200,000,000. It appears, therefore, that Great Britain through sterilization of gold has a stake in the future of gold comparable to that of the United States.

THE UNITED STATES GOLD POSITION

Secretary Morgenthau stated June 29, 1937, that the American inactive account was then $1,058,000,000, besides which the American stabilization fund had $1,800,000,000 gold to which it has title in its own name. The American Treasury thus commanded $2,858,000,000 of gold. On Dec. 3, 1937, the Treasury's inactive gold stood at $1,237,555,020.

A large quantity of gold came out of Japan during 1937 to finance its deficit in trade, which was aggravated by its military requirements.

Whatever may have been the intention in respect of raising commodity prices by raising the price for gold it is clear that there has not yet been a corresponding effect. Using 1913 as 100, the index of general price level, according to the Federal Reserve Bank of New York, was about 180 from 1922 through 1929; 130 in 1933, and about 160 in 1937. Similarly the wholesale commodity price index of the U. S. Department of Labor compared with 100 in 1913 was fairly steady at 137 to 147 from 1921 through 1929. It was 94.4 in 1933 and will be about 125 in 1937.

WORLD PRODUCTION OF GOLD

The world's production of gold, exclusive of Russia, in the first nine months of 1937 was about 22,200,000

ounces, compared with 20,600,000 ounces in the corresponding period of 1936. It is hazardous to offer at this time a close estimate of the world's total production in 1937, owing to increased uncertainty in respect of the Russian production. The Soviet authorities for several years back have abstained from publishing precise figures, and all outside estimates have been based on rough intimations from Moscow, which might have the effect of multiplying error. Moreover news came during 1937 that there has been some deception in Moscow itself, and that progress in gold production in the Soviet Union has not recently been so brilliant as represented.

It appears that the Russian production in 1936 may have been estimated 500,000 ounces too high, and that making this correction in the world production was really about 35,000,000 ounces. If it may be guessed that the Russian production in 1937 was 7,000,000 ounces, the year's total for the world may have been about 37,000,000 ounces. Whatever error there may be in this estimate will not vitiate the statement that in 1937 there was a further large increase in gold production, such as has been occurring annually since 1929, when the world's total was 19,670,000 ounces, at about which rate it had been steady for a long series of years.

GOLD RESERVES AND DISPOSITION

Whatever be the uncertainty in respect of Russian production there is none as to the quantity of refined gold that came out of Russia in 1937, Great Britain having received from that source during the first nine months a total of 5,713,826 ounces, this movement having begun in 1937. Prior to that a good deal of unrefined gold came from Russia to the United States, a movement that ceased in 1936, indicating that the Russians had become able to do their own refining.

There is suspicion that a large part of the Spanish gold reserve in the hands of the Nationalist Government has gone to Russia in payment for military supplies, and that this may have played a part in the exports of gold from Russia to London. Besides such gold receipts Great Britain continued to get a good deal of unrefined gold from the Orient, but that flow appears to be waning, and the total for 1937 was undoubtedly materially less than in 1936.

According to computations in the *Federal Reserve Bulletin* for August, 1937, the receipts of gold from the beginning of 1931 to the middle of 1937 were from Indian private holdings about 35,000,000 ounces; from Russia about 14,900,000; from China, Straits Settlements and Egypt about 10,500,000; from return of coin about 7,100,000; from return of scrap (old jewelry, etc.) about 22,800,000; from new production, exclusive of Russia, about 156,000,000. The total addition to the gold resources of the western world, exclusive of Russia, was therefore about 246,300,000 ounces in this period of six and a half years.

The disposition of this gold is estimated by the Federal Reserve Bank as follows: Increase in reported central gold reserves, 166,300,000 ounces; industrial consumption, 16,200,000; increase in unreported official holdings and in private hoards, 63,800,000.

SILVER MINING

Silver is dominated by the myth that its production in the United States engages several hundred thousands of men and the idea that the possession by the Treasury of a great quantity of silver bullion is economically beneficial. Hence the payment of a bonus-price for all domestically Tonopah, Sunshine and the Presidio mined silver and the purchase of large quantities of foreign silver. In fact, upward of 50 per cent of the domestic production of silver is supplied by a dozen large companies, whereof only three, *viz.* Tonopah, Sunshine and the Presidio mine of the American Metal Co. may be classed as straight silver mines. In respect of the other major producers, and likewise as to the smaller producers, their silver is in the main recovered as a by-product in the treatment of copper, lead and zinc ores. A premium for silver naturally assists in the mining of such ores.

SILVER COINAGE AND PURCHASE ACTS

The silver market has been dominated by two American legislative enactments, one under the act of May 12, 1933 and the other under the act of 1934. By the terms of the first the American Government accepted the entire domestic production of virgin silver at a price to be proclaimed by the President (this having first been 64.64c. per ounce and subsequently 77.57c. per ounce) the government issuing silver certificates against these acquisitions. This is described as the Silver Coinage Act. By the act of 1934, described as the Silver Purchase Act, the American Government was committed to the purchase of silver generally, including foreign silver, up to a limit that would bring our holdings of silver to one third of our holdings of gold, or else raise the price for silver to $1.29 per ounce. In order to fortify our position and prevent the American Treasury from becoming a receptacle for all silver that might be produced throughout the world, or might be realized from existing hoards, there was brought about by treaty, known as the London agreement, an undertaking among all or most of the silver producing and silver using countries of the world to absorb proportions of their productions and to refrain from dumping.

Up to June 30, 1937 the Treasury had acquired 151,834,000 ounces of domestic silver under the Coinage Act and 1,015,828,000 ounces under the Purchase Act. The Government had issued silver certificates to the amount of $589,773,000 for the purchase of such foreign silver. It is argued by the political exponents of these acts that the purchase of silver under their terms is free of cost to the Treasury and is not inflationary. It is the purpose of this review to present only a summary of facts.

EFFECT OF AMERICAN SILVER PURCHASES

Although the American government has been the world's great purchaser of foreign silver its effect upon the commercial price has been only moderate. In 1929 the price for silver was 53c. per ounce. In 1932 it was 27.9c. In 1934, after a full year of governmental buying, it was about 48c.; in 1935, about 64.3c.; in 1936, about 45c. In 1937 it held around 45c. up to the early part of December, when it fell suddenly to about 41c., where it stood at the end of the year.

The sudden drop in December, 1937 was associated with doubts and fears as to what was going to happen—whether the minting of American produced silver by presidential proclamation which expires by limitation on Dec. 31, 1937, would be extended by presidential proclamation; the certainty that the London agreement, also expiring Dec. 31, 1937, would not be renewed; the consciousness that the wars in Spain and China had largely cracked that agreement anyhow; and finally the fear that the conquest of China by Japan might result in liquidation of silver.

Along with these uncertainties was the arrival in London of approximately 80,000,000 ounces of Chinese silver, some of which was transferred to New York. None of this metal was thrown on the market, it being held as collateral for credits. Nevertheless the existence of such large stocks, which might be liquidated, weighed on the market.

On Jan. 1, 1938, President Roosevelt removed uncertainty regarding the price to be paid for newly mined domestic material, proclaiming the price of 64.64c. an ounce as against 77.57c. previously prevailing.

WORLD PRODUCTION OF SILVER

The world's production of new silver in 1929 was about 263,000,000 ounces. In 1933 it was about 170,000,000 ounces, and in 1936 about 250,000,000 ounces. In 1937, on the basis of returns for the first nine months, it is indicated that the world's production will be about 280,000,000. This does not show any great effect of artificially increased prices for silver since 1933. This may be associated with the condition that there are relatively few mines in

the world that are worked for silver alone, and that the trend of silver production harmonizes mainly with the trends of copper and lead production. Obviously the pattern of silver production statistics is distinctly different from that of the gold production.

IRON AND STEEL

By Edwin F. Cone

Editor, *Metals and Alloys*

THE INDUSTRIAL TREND

The trend of the steel industry of the United States in 1937 was so unusual that it can be compared to no other year. Up to the last quarter, production and demand for pig iron and steel was at a pace equal, or nearly so, to that of the best year in the history of the industry. But during the last quarter this pace slackened abruptly, due to a general recession in business. The falling off in output was so sharp that it surpassed any similar decline in the past. Operating ingot rate, which before the decline was at an average of 80 to 90 per cent of capacity, fell to below 20 per cent late in December. In other words, if the production rate could have been maintained during the closing months of the year, the 1937 pig iron and steel output would have probably exceeded the best year in the country's history.

COMPARATIVE PRODUCTION

A study of statistics offers the best picture of the record of the American steel industry for 1937. The most reliable data are those of the American Iron and Steel Institute. Based on these figures, the adjoining table represents, with the output for 1937 partly estimated, the production of pig iron, including ferroalloys, and steel for a number of years in gross tons.

From these data it is evident that the 1937 record of the steel industry, despite the severe slump in the last quarter, made an enviable record.

Pig iron at an estimate output of 37,190,000 gross tons in 1937 was nearly 20 per cent in excess of the 1936 total. It was the largest total since 1928 when the production was 38,155,714 tons. It has been exceeded by only three years—1926, 1928 and 1929.

Year	Pig Iron	Steel
1937	37,190,000*	50,704,000*
1936	31,029,187	47,767,856
1935	21,372,699	34,092,594
1934	16,138,573	26,055,289
1933	13,345,602	23,232,347
1932	8,781,453	13,681,162
1931	18,426,354	25,945,501
1930	31,752,169	40,699,483
1929	42,613,983	56,433,473
1928	38,155,174	51,544,180
1926	39,372,729	48,293,763
1921	16,688,000	19,783,000
1913	30,966,000	31,301,000
1898	11,774,000	8,930,000

* Estimated

Total steel output, including castings estimated at 50,704,000 tons in 1937, was the largest since 1929, and showed an increase of about 6 per cent over 1936. The estimate shows the 1937 record to have been exceeded only by 1928 and 1929.

"PRINCE OR PAUPER"

It has been aptly said that the steel industry is either "prince or pauper." No better illustration of this can be found than the history of the industry in 1937. Final actual figures of the year's output was not available when this series was compiled, but preliminary data of the American Iron and Steel Institute indicated a December production of steel ingots of 1,472,241 gross tons. This was not only the smallest for any month during 1937, but was the smallest monthly total since September, 1934. It was actually 71¾ per cent under March, 1937, the best month of the year, at 5,216,666 tons. The March output was the second largest for any month in its history and, for the quarter ended with last

March, the total exceeded all records. Thus, in the space of nine months, or from March to December, the ingot output decline of 71¾ per cent was probably unprecedented.

IRON AND STEEL EXPORTS

Export trade in iron and steel during 1937 made an unusual record. The estimated total was 3,500,000 gross tons, the sixth highest figure in the history of this movement and the largest since 1920. This was due in no small degree to the heavy demand of European and other countries where rearmament programs were in full swing. A feature of this movement was the foreign demand for pig iron, in which a new record was made. To Nov. 1, 1937, this total was over 716,600 gross tons as compared with only about 1,900 tons to Nov. 1, 1936. Another feature of the foreign trade in iron and steel in 1937 was the sale abroad of scrap iron and steel in which a new record was made. The total for 10 months was over 3,520,800 gross tons, which compares with 1,751,000 tons for the same 10 months in 1936. Japan was the chief buyer, taking 1,868,000 tons to Nov. 1, 1937, or over 50 per cent of the total outgo. The United Kingdom ranked second.

PROGRESS IN ALLOY STEEL

Students of the American steel industry are always keenly interested in the growth of the alloy steel output. Data for the total alloy steel production for 1937 will not be available until May or June, 1938, but the figures for 1936 have been published since this report of a year ago. The following table, compiled from the official data of the American Iron and Steel Institute, shows the trend in recent years in gross tons:

Year	Total Alloy Steel	Per Cent of Total Steel
1929	3,957,207	7.01
1930	2,443,311	6.00
1931	1,455,913	5.61
1932	798,604	5.54
1933	1,547,183	6.66
1934	1,612,275	6.19
1935	2,119,658	6.21
1936	2,883,622	6.04

Stability in the demand for alloy steels is indicated by these data for a period of years. A striking fact is that the depression had only a minor effect on the progress of this branch of the American steel industry. During the last four years the production has averaged 6.27 per cent of the total steel production. At no time, however, has it reached the large production of 1929.

The 1937 output is likely to have reached a total of 3,250,000 to 3,500,000 tons and, if more normal conditions should return during 1938, there is a possibility that the nearly 4,000,000-ton production of 1929 may be equalled.

A word should be added as to just what an alloy steel is. Because of differences of opinion as to the proper definition, the official data do not include the entire alloy steel production. They are, however, comprehensive enough to show the trend of the industry as a whole.

STAINLESS STEELS

Probably the most important branch of the highly specialized steels is that group designated as stainless steels. Progress in this field has been outstanding each year. More is known about the properties of this complicated group, and new compositions are frequently developed. New uses are also constantly coming into notice.

As indicated in this review a year ago, data on the production of these steels are now collected by the American Iron and Steel Institute, but they do not represent the entire production because of inability to obtain reports from all companies. The data for 1936 are now available, those for 1937 not being published until about the middle of 1938. In gross tons the production of stainless steel ingots (not including castings) is as follows:

Types	1934	1935	1936
18% Cr and 8 % Ni	19,777	24,711	39,107
12 to 14% Cr	8,902	13,232	23,598
16 to 18% Cr	8,077	12,837	21,288
All other high Cr and Cr-Ni alloys	13,161	14,917	6,973
Totals	49,917	65,697	90,966

Thus in 1936 the 90,966 tons produced was 82 per cent larger than in 1934 and nearly 40 per cent in excess of that of 1935. In all probability the output for 1937 will show a substantial increase over that of 1936 and will total well over 100,000 tons.

THE INDUSTRIAL OUTLOOK

With the uncertainty that prevailed at the close of 1937, caused by the business recession, or secondary depression, then in effect, any predictions as to the future seem entirely futile and untrustworthy. Opinions in the trade differ as to the future. Some leading steel industrialists feel that the present setback is only temporary, and that by early spring or a little later, an upward swing in demand will have materialized, which will put the industry back on its feet. Brakes on a possible increase in steel demand are the poor condition of the automobile industry, the financial inability of the railroads to purchase needed new equipment, and the prostrate condition of the building industry. A favorable factor is the state of inventories of steel consumers, which are probably low.

METALLURGICAL RESEARCH

Research in metallurgy and in other branches of the steel industry continued at full pace in 1937. The large research institutions such as Battelle Memorial Institute, Mellon Institute and others, as well as the extensive research departments of the U. S. Steel Corporation, the Union Carbide and Carbon Corporation, the International Nickel Co. and others were active in the prosecution of problems in practical and pure research. Results of much of this work were not announced, but progress reports of various kinds appeared. It can be said that much of distinct value was accomplished during the year which in the end will add to the knowledge of fundamentals and improve the quality of products.

A year ago in this review, the low-alloy, high elastic steels were described and a list of the various types presented. During 1937 no new steels of this nature were announced, but many interesting applications were made public. This was particularly true in the construction of vehicles for transportation where a saving in weight at no sacrifice in strength was the chief consideration.

Distinct progress in the study of the proper atmospheres in which steel should be heated not only to protect its surface from oxidation, etc., but also to prevent carburization or decarburization as well as other damage, was made in 1937. Some of the results were published in contributions to the technical press, particularly in articles in *Metals and Alloys*.

Definite progress has been made in the study of creep properties of steel. Creep is the deformation or the slow continued stretching which metallic parts undergo when submitted to tension under high temperatures. American metallurgists have actively pursued this research with the result that the subject is much more thoroughly understood.

"Brunorizing" is the name of a new process of heat-treating steel rails which was announced in 1937 by the U. S. Steel Corporation. It is claimed to result in longer life with less tendency to failure from transverse fissures or other defects.

COAL AND COKE

By R. Dawson Hall

Editor, *Coal Age*

COAL INDUSTRY AND PRODUCTION

The coal industry in 1937 demonstrated that it still retained much of its old-time vitality, but only so long as business remained good. When the recession came, sales of coal rapidly decreased, and the year ended in a note of discouragement, likely to continue until general business revives. Mechanization made progress, but developed few new systems or devices.

Outputs of bituminous coal in 1929, 1936 and 1937 were 534,989,000, 434,070,000, and 440,265,000 tons respectively, a rise of 1.4 per cent in 1937 over 1936. Tonnages of anthracite in the same years were 73,828,000, 54,760,000, and 50,091,000, a decline of 8.5 per cent in the year 1937 from that in 1936. Beehive coke produced in those years was 6,472,000, 1,706,100, and 3,156,300 tons, a rise of 279 per cent in 1937 over 1936. The most recent figures are subject to revision, as the U. S. Bureau of Mines, whose figures are taken, has no final returns. Moreover, outputs of small truck coal banks in bituminous areas and bootleg operations in the anthracite region may materially affect the record.

GUFFEY-VINSON ACT

In industrial and public interest, no matter was more important than the Guffey-Vinson Act for regulation of bituminous coal. Introduced in the Senate by J. F. Guffey and in the House by F. M. Vinson, Jan. 6, 1937 to replace a bill lost by threat of a filibuster, the bill proposed to set up a National Bituminous Coal Commission, to be composed of two experienced mine workers, two retired coal producers (with no financial interest in mining, transportation or sale of equipment for coal, oil or gas or in the generation, transmission or sale of hydroelectric power or in the manufacture of equipment for use by the coal industry) and three others. It also provided for 23 districted boards. The Commission is empowered to set maximum and minimum prices and to prohibit unfair competitive methods. Wage and hour regulations were stripped from the old bill, but collective bargaining without employer interference is required. The government can buy no coal except such as produced under prescribed labor conditions. On April 12, the act passed both Houses of Congress and was signed by the President, April 26. An excise impost finally was placed at 1c. per ton with an additional tax of 19½ per cent of the sale price on coal produced by operators not signatory to the code.

NATIONAL BITUMINOUS COAL COMMISSION

C. F. Hosford, Jr. was appointed operators' representative and chairman of the Commission. Col. T. S. Hammond was the other operators' representative. Miners' representatives were Percy Tetlow and J. C. Lewis and those of the public, C. E. Smith, W. H. Maloney and P. E. Greenlee. John Carson became consumers' counsel. All were sworn in, May 17.

Except for the lignite of North and South Dakota, weighted average costs were announced by the Commission, early in November. The Commission could not decide at that date if the coal of those States was "lignite," if not it would come under the terms of the Act. At the same time, it decided that all Ohio coal sold in intrastate commerce should be subject to the act, effective Dec. 15, declaring that the sale of that coal affected interstate commerce.

Prices were in effect Dec. 16 for districts east of the Mississippi and in Iowa. Some were effective as of Dec. 27 and Jan. 3. Prices of industrial and railroad fuels were raised, being brought more in line with pro-

duction cost, but domestic prices generally were lowered. Chairman Hosford, vexed at criticism for delay, resigned, Nov. 3, but withdrew his resignation, Nov. 12.

LABOR QUESTIONS

Appalachian bituminous operators tried to forestall the arranged wage-revision meeting with their miners, Feb. 17, by declaring that they had decided, Dec. 15, of the previous year, to grant no change in wages or hours as of April 1. But on April 2, they made an agreement raising wages 50c. a day for all men, except (1) miners using mechanical and conveyor devices and working on a day or hourly rate, and (2) all strip-pit production employees. Wages of workers in the excepted categories were advanced 70c. a day. Yardage and deadwork rates were increased 10 per cent. Time and a half for overtime in excess of seven hours in one day or 35 hours in one week was applied for the first time. Employees engaged at power houses, substations and pumps which operate continuously for 24 hours daily and others whom local mine management and district union officials should agree to exempt from the shorter hours were to be limited to an 8-hr. day and 40-hr. week with time and a half for overtime.

Similar increases were made promptly in Harlan County, Kentucky (non-union). Other agreements followed: April 4, Colorado (in part) and New Mexico; April 11, southern West Virginia; April 12, western Pennsylvania and northern West Virginia; April 20, all but three major operations in southwest Virginia.

Demand for sole recognition by both United Mine Workers Union and Progressive miners caused 11 companies which employ Progressives to withdraw from the Illinois Coal Operators Association. The president, who was employing both at different mines, resigned. Other settlements were: April 27, western Kentucky (with each union separately); May 3, Colorado; May 10, Arkansas and Oklahoma; May 18, U. S. Steel Corporation affiliates; June 15, Illinois Coal Operators Association with United Mine Workers; Aug. 31, Coal Producers Association of Illinois with Progressive Miners.

In accord with the contract signed, May 8, 1936, the 7-hr. day and 5-day week went into effect in the anthracite region on May 1. Because six members of the strike committee had been discharged for interference with mine operation, 350 miners of the Superior Coal Co.'s, No. 4 mine, Wilsonville, Ill., staged a sit-down strike for 200 hrs., ending June 3.

MECHANICAL PROGRESS IN MINING

Storage-battery rubber-tired trackless tractors for hauling coal underground as designed by J. H. Fletcher made progress in 1937. Coal is hauled from the working face in two-wheeled, double-tired trailers with drop-bottom doors to a transfer hopper with feeder and conveyor belt to deliver coal into cars or into an entry conveyor. At the Blue Bird mine, Saline County, Illinois, where the first installation was made, three tractors with six batteries, used one at a time on each tractor, three 3-ton trailers and a 5-ton hopper with feeder and conveyors serve one mobile loader. A duplicate was ordered for August. Moss Hill No. 2, a mine of the Hart Coal Corporation, Mortons Gap, Ky., uses the same methods and has two mobile loaders, five tractors, five trailers, ten tractor batteries, three shortwall cutting machines, two post-mounted electric drills, one dump hopper and feeder with a sectionalized mine-car loading conveyor. Here, 20 tons per shift are handled per man below ground. The tractors with an empty trailer travel on level roads at 6 m.p.h. and at 4 m.p.h. with a full trailer. With three tons per car mechanically filled, the height of the trailer loaded is 30 in. with 6-in. clearance under doors. Width of trailer is 6 ft. 3 in. and length 10 ft. 6 in. Diesel-engine tractors later may be used. No punctures and little wear were discoverable at the Blue Bird mine after hauling 70,000 tons.

Loading machines with track trans-

portation from the face, because of the delay, due to shuttling cars, one by one, to the loader, work only from 40 to 49 per cent of full time, when efficiently operated, and tracklaying costs, with utmost convenience for such shuttling, costs 5c. per ton loaded. With conveyors or rubber-tired trackless trailers, continuity of operation can be increased 30 per cent.

At least three bituminous mines came into all-conveyor production in 1937, none of which was large. Earl J. Jones' mine, near Zanesville, Ohio, where coal is placed on conveyors by mobile loaders, produces 1,400 tons daily with the aid of a belt conveyor in the main heading extending to the tipple with chain flight conveyors to move coal in room headings and rooms. For every man employed underground 9.7 tons per shift is produced. Coal is trucked from the tipple to a wharf 5½ miles away and carried by barge five miles to Philo, O. to a power plant which takes almost the entire output. In winter, the coal is trucked the entire distance.

Turner No. 2 mine of the Turner Elkhorn Mining Co., Drift, Ky., has a 30-in. belt in the main heading and a 24-in. belt in the room heading. Shaker conveyors operate in rooms and in the frequent wide room-crosscuts. Coal is loaded by hand into conveyors. Output per man shift excluding superintendent and assistant is 8.27 tons, which is 32 per cent more than in a comparable all-car mine of the same company. Output is 380 to 450 tons daily.

Barely completed is a thin seam mine, the Sunshine, of the Binkley Mining Co., near Spadra, Ark. Here the coal is loaded by mobile loaders and transported by shaking chutes, flight conveyors and belts to the tipple, the main belt traveling up a long rock slope. The other installations are in beds that outcrop to the surface.

For driving haulage ways at the Powellton mine of the Koppers Coal Co. in West Virginia, scrapers have been provided with loading gantries which have their hoisting drums mounted on a cradle so that the drums can be dropped for traveling in low places. The loading boom is made detachable so that sharp curves can be negotiated.

Another improvement introduced by the Clearfield Bituminous Coal Corp. has been to extend the car-loading end of a scraper gantry so that, with the aid of supporting steel posts and with hoppers of suitable widths properly spaced, the rock or coal can be slushed in equal quantities into all the cars of a trip at one travel of the scraper. Thus a whole trip can be loaded at one spotting and without uncoupling cars.

Bituminous coal is often stripped of 40 or more feet of overburden. Where the cover of the coal has merely to be transferred to one side, because the adjacent coal and cover has already been removed, the big stripping shovels alone are quite capable of performing this function, but where a first, or "box" cut has to be made the shovel would have to lift some of the material almost 80 ft. vertically. So, to lessen the lift, small draglines have been used to remove looser material over a wider area than the cut. Into the side of this wide excavation, the big stripper can deliver its waste. But sometimes scrapers have been used to do the surface work, and recently 8- to 12-cu. yd. carrying scrapers pulled by tractors have been introduced. They may be used to move spoil an average of 350 ft. or much more. Such scrapers may be utilized later for ditching, railroad building, dam erection and for reduction of excessive overburden where found.

But where the overburden exceeds 50 ft., stripping shovels even after box cuts have been made will have to be larger than those now provided, or the overburden cannot be handled, so a walking electric dragline, the largest installed at an open-pit operation, was introduced at the Old Glory No. 17 mine of the Maumee Collieries Co., near Clay City, Ind., to remove 40 to 58½ ft. of overburden with an average over 50 ft. The depth of overburden is 20 times the

coal thickness which is 2½ to 3 ft., but the dragline could handle 80 ft. of cover if that were profitable. It has a 12-yd. bucket and a 165-ft. boom and usually stands on the top of the slate rock which it ultimately lifts, first placing the surface clay and top soil on top of the slate pile made from an earlier setting. Draglines are progressing in bituminous stripping practice as in anthracite, but shovels are favored where the cover is under 50 ft. The Pittsburg & Midway Coal Mining Co. has ordered a 34-cu. yd. shovel with a 105-ft. boom and 68-ft. tubular dipper stick for its No. 15 mine near Pittsburg, Kan. This will be the largest in use, but several 32-cu. yd. shovels are in operation. At one stripping trailers of over 40-cu. yd. capacity with drop bottoms are now being used for hauling coal.

WASHING

A new washing method, designed at the Battelle Memorial Institute, by B. M. Bird has been introduced at the Nellis Coal Corp. mine in Boone County, W. Va. It is a launder washer with 12 draws, each divided into four compartments, thus providing for close adjustment of water upflow through the screen plates between pockets. Horizontal currents of water crowd the slate so as to exclude coal, which is also driven out of the slate, all along the bottom of the launder, by slow-moving currents. Measuring only 6×24 ft. and 5½ ft. high, it cleans 30 tons of $5/16 \times 0$-in. coal per hour reducing ash from 31 to less than 7 per cent with a float less than 2 per cent of the total weight of refuse.

Small explosions of dust sometimes occur in preparation plants. Results have not been disastrous because of easily demolished fenestration. However, vacuum cleaning methods with pipe systems have been used to clean these structures. Champion No. 6 plant of the Pittsburgh Coal Co. at Negley, O. having a launder for coarse and an air-flow cleaner for minus 3/8-in. coal, gathers by hoods not only the coal from the air cleaner but also from conveyors and screen room. Vacuum cleaners and 25 outlets also are provided for cleaning the interior of the structure. Seven-inch coal is being washed at some plants, but in many cases it has to be hand-picked later because consumer-acceptance usually is based on appearance, not on average purity.

Oil spraying of coal has made much progress. It eliminates 70 to 90 per cent of the objectionable dust, decreases tendency of coal piles to fire, minimizes moisture absorption, makes coal more mobile, preventing arching in bins, bunkers, chutes, stokers, etc., decreases degradation in handling and eliminates metal corrosion. Wax treatment of coal also is progressing. At the Butler Consolidated Coal Co.'s mine, at Wildwood, Pa., 23 to 25 lb. of petrolatum, at 105 to 110 deg. F., applied per ton of coal to the undersize of mine-run coal by sprays below the deck reduced flydust 75 to 80 per cent. Battelle Memorial Institute has proved that 200-sec. Saybolt Universal Test oil gives better results than 100-sec. oil for this purpose.

BREAKING

In the anthracite region, the growth of sales for fine coal has made provision for the breaking of even stoker size seem advisable and, where companies already have breakers producing egg size, breakers are sometimes constructed without facilities for making that size. The larger small sizes are so much in demand that the companies are disposed to provide new power houses with provision to burn Buckwheat No. 4 and silt instead of the larger small sizes hitherto burned. The Glen Alden Coal Co. erected four tubular boilers to burn Buckwheat No. 4 and silt, and to generate steam at 600 lb. pressure per square inch. Buckwheats No. 5 and No. 6 are being produced in the anthracite region, but these sizes are not completely standardized, partly because consumers want many variant standards and because the cleaning and sizing of such fine coal is still almost an

unsolved problem, which only one or two companies have approached.

At the Jodie Power Plant, of the Gauley Mountain Coal Co., in West Virginia, spreader stokers have been installed to spread by air ½-in. coal over the fuel bed, but 2-in. coal can be used with satisfaction. At the Sherwood Templeton coal-mining plant, Linton, Ind., chain-grate stokers are burning slurry with as much as 24 per cent water and 23 per cent ash for 90 per cent of the time.

Mercury-arc rectifiers of the tank type were recently erected for one-third the cost of mechanical rectifying equipment. They can be dismantled and re-erected as the load center changes at a cost of about 8 per cent of the original installation. Each month at the Pittsburg Coal Co.'s plants, 2.2 per cent of the rectifier cost is saved over mechanical equipment. The Weirton Coal Co. will use igniter mercury-arc rectification at Isabella, Pa.

PUMPING

Deep-well turbine pumping, in which the turbine pump is in the mine and is driven through a shaft by a motor at the surface made further strides in 1937. Following the Humphrey Coal Co., Greensburg, Pa., which placed four 16-in., 3-stage, 350-hp. deep-well turbine pumps to handle 2,500,000 tons of flood water in 46 days lifting it 200 ft., the Koppers Coal Co. at Glen White, W. Va., installed a 2,000-g.p.m. 300-hp. pump of like kind in a 450-ft. hole to tap a worked-out and inaccessible part of the mine. The State of Pennsylvania installed four 4,000-g.p.m., 600-hp. deep-well pumps with 450-ft. head for dewatering the Commodore Mine, near Uniontown, Pa. In December three 3,200- to 3,500-g.p.m. 300-hp. deep-well pumps to work against a maximum head of 240 ft. were started by the State of Illinois to displace 3,000,000,000 gal. in the Sahara No. 3 mine of the Sahara Coal Co., Harrisburg, Ill. Greater safety and speed in dewatering are claimed for such installations. Once set they continue in place until the job is finished.

COKE

Coke was in such demand at industrial furnaces during 1937 that much beehive product was used to meet the need and many ovens that were repairable were returned to service. All the three major plans making a low-temperature domestic coke or coke product—Pittsburgh Coal Carbonization Co., at Champion, Pa.; Radiant Fuel Corp., at West Frankfort, Pa.; and Lehigh Briquetting Co. at Dickinson, N.D.—continued in service but without additions during 1937. At the Coalene plant in Tacoma, Wash., a 20-ton 24-hr.-per-day unit with four retorts for coal that are surrounded by outer casings receiving steam at 4-lb. pressure and 1,200 deg. F., continued operations. This plant carbonizes the coal, making a 750-lb. solid cylinder of semicoke which is removed with the inner container to be broken later to domestic size and undersize. Other experiments are being made in Denver, and the U. S. Bureau of Mines has received $100,000 to apply to low-temperature carbonization tests of western coals.

MINE DISASTERS

During 1937, mining was troubled by many "major" (that is, more-than-five-fatalities) disasters. Chief among these was one at the mine of the Woodward Iron Co., Mulga, Ala., Oct. 15, where 34 men were killed. A shotfirer relighting a safety lamp with a match in an atmosphere with a high concentration of methane, resultant on the opening and latching of a ventilation door, caused a mild explosion which extended over the entire area thus deprived of ventilation. Latches were found at other doors; men were not adequately searched for matches and tobacco and lamps sometimes were not locked, declared the inspection committee.

At the Glendora Coal Co.,'s Baker Mine, near Sullivan, Ind. an explosion, July 15, killed 20 men. This was caused by the unexplained blowing out of wood seals, temporarily erected in two abandoned entries, prior to more permanent sealing.

The methane thus released ignited, killing the men. On the night of March 11, the McBeth mine of the Hutchinson Coal Co., near Logan, W. Va., blew up, killing 18 miners. At the Kramer mine, of the Northwestern Mining and Exchange Co., Stump Creek, Jefferson County, Penn., an explosion occurred, killing two miners. Seven rescuers, 45 minutes later, were killed by a second explosion apparently caused by the fire set by the first. Another explosion occurred in the Excelsior field near Ft. Smith, Ark.

RESEARCH, STUDIES, TESTS

An appropriation of $350,000 spread over four years extended the life of the Coal Research Laboratory, of the Carnegie Institute of Technology, Pittsburgh, Pa. Many new companies, representing the coal industry, railroads and industry, will support the work.

Coal hydrogenation tests continued at the U. S. Bureau of Mines and the Pennsylvania State College. Agitation has been found more important than the use of a catalyst and the catalyst more important than the vehicle in determining how much of the coal used can be converted into oil by hydrogenation. Tests were made by the Bureau in bombs with tetralin as a vehicle, and it was found that oxygen removal during the first three hours is rapid but later is much slower; hence the coal substance either embodies at least two linkages or the original oxygen linkage in the coal yields upon destructive hydrogenation a second type less easy to hydrogenate. Hydrogen content increases and organic sulphur decreases also most rapidly in the first three hours, but these changes are less marked than oxygen removal. (*Ind. & Chem. Eng. 29,* 133–143.)

Studies of the Coal Research Laboratory indicated, according to its report late in 1937, that when bituminous coal is oxidized by aqueous alkali and gaseous oxygen, carbonic, acetic, oxalic and aromatic acids are formed. With potassium hydroxide as the alkali and any one of a list of catalysts or no catalyst at all is used, the percentage of the original carbon in the coal is constant in the carbonic acid, oxalic acid, and aromatic acids, showing the catalysts to be of no effect. When cupric sulphate is used, however, the carbon percentage in the oxalic acid drops one-half its normal value and the carbon percentage in the aromatic acids drops markedly, while the percentage of carbon in the carbonic acid gains from both.

A layer of anthracite at Locust Gap, Pa. with 35.4 per cent ash and only 0.5 per cent sulphur was found by the U. S. Bureau of Mines to ignite at 655 deg. F. This may be indicative of its alleged subjectivity to spontaneous combustion. Ordinary anthracite fires at 844 deg., but 655 deg. F. is high compared with the ignition point of a Colorado coal, which is 367 deg. F. Temperatures needed for ignition lower with decreased anthracite size. (*Ind. and Eng. Chem. 29,* 106-108.)

Silicon carbide has been found to be a good standard inert material to mix with coal as a means of reducing its agglutinating value on carbonization and thus determining an index of its coking strength. Ottawa sand was used as a standard but, while superior to most other diluents, was found to be nevertheless a little uncertain.

A report on the Knowles sole-fuel oven showed that, as operated, the lower two-thirds of the charge was a high-temperature product and the upper third a low-temperature product, but the oven could be operated to give the first type of combustible exclusively (*Ind. and Eng. Chem. 29,* 506). Sodium silicate is being used with some modification for briquetting coals and mixtures of coals (*Ind. and Eng. Chem. 29,* 715). A cobalt-copper catalyst has been devised by the U. S. Bureau of Mines to assist the water-gas shift reaction and is being used by the Bureau in the hydrogen-generation equipment which is ancillary to the hydrogenation plant. (*Ind. and Eng. Chem., 29,* 715.)

Carbon dioxide for the manufac-

ture of dry ice has been economically produced from flue gas. Ammonia with steam is added to form ammonium carbonate, which is soluble in potassium carbonate and, being used in the gas form, it makes a more complete absorption than with potassium carbonate alone, resulting in higher yields of carbonic dioxide with recovery of ammonia on heating with lye (*Ind. and Eng. Chem., 29,* 632-636; *Power,* Aug. 1937, 442-443). A successful semi-plant furnace was constructed by the Northwest Research Institute in 1937 for the production of modified water-gas from lignite.

The Northern States Power Co. showed that two or more flue ashes which melted at the same temperature had a different degree of flux and should be differentiated. This was shown by photographs which also showed a difference in physical appearance. Efforts are being made to correlate appearance with variant clinkering characteristics (*Ind. & Eng. Chem.,* Anal. Ed. 9–106).

NON-FERROUS METALS

By Walter Renton Ingalls

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GENERAL

The economic history of copper, lead, tin and zinc in 1937 followed substantially the same pattern. There was a fantastic rise in prices during the early part of the year, especially in the first quarter. Then there was a gradual recession to moderate levels after which for several months the markets were fairly steady. Prior to the end of the third quarter it was evident that there was going to be a slump, although this was obscured for a while owing to coincidence with the normal seasonal recession in demands.

The fantastic rise in prices in the first quarter was ascribable to wild speculation in the London market, based on false ideas as to the imminence of great military demands, and expectations of monetary inflation. The recession was a natural consequence of speculators trying to liquidate, hastened perhaps by rumors of a write-down in the price for gold. The slump was the consequence of general economic recession in the United States, an explanation of which is outside of the scope of this review.

Two broad features, however, may be touched upon. One of these is why the speculative bubble in London in the early part of the year had such a powerful effect upon American prices and why the slump in America reduced foreign prices to such low levels as to excite the fear that our depression, regarded as local, might be foreshadowing a worldwide recession. In both instances the answer is superficially the same, *i.e.* the desire to prevent imports or exports, especially as to copper and lead.

When the London price for copper went up the New York price had also to go up to keep the necessary supplies at home. When the New York price went down London also had to go down to keep out American copper that was not wanted. The same conditions did not exist in lead and its situation was consequently more orderly. In respect of both tin and zinc there were conditions peculiar to themselves.

The collapse in prices in the spring was coincident with a declaration by President Roosevelt against high prices, but that was hardly a cause, for the bubble had been distended to bursting anyway.

Another feature to be observed is that, although the American consumption of copper increased to an average of about 80,000 tons per month in the first half of 1937, that was only about 80 per cent of the

rate in the corresponding period of 1929. On the other hand the rate of consumption in Europe was far ahead of 1929.

COPPER

The domestic price for copper was advanced to 10c. on Oct. 26, 1936 and to 12c. on Dec. 31. Large sales were made during that period. Producers had no confidence in the advance and sold freely ahead. Some of them at that time sold their entire expected production during the first half of 1937. It follows from this that producers did not realize to any great extent the high prices subsequently quoted.

On Mar. 31, 1937, after five advances, the price peaked at 17c., but that prevailed for only a few days and on Apr. 6, it was reduced to 16c., following which in three step-downs it settled at 14c., which prevailed until near the end of September. Domestic sales having by that time begun to fall off sharply, the smelters who take in ores and scrap on quotational basis were obliged to cut the price for refined copper in order to avoid accumulating stocks. Consequently the market crumbled gradually away, and small business was done mainly by the custom smelters with the producers of new copper practically out of the market, and by the end of December the domestic price was down to about 10c. Meanwhile the London price was obliged to underrun the New York price in order to forestall offerings of American copper in that market, and at the end of 1937 the London price was about £40 for standard, which was about on a parity with New York.

With the advancing market, production was naturally stimulated, all restrictions being removed. In the United States the monthly rate rose to about 75,000 tons by the middle of 1937, and outside of the United States to about 184,000 tons, these figures being close to estimated capacities. Even so, visible stocks were reduced, there having been a sharp increase in domestic consumption and a phenomenal increase in foreign consumption during the second quarter. In respect of Japan, increased consumption was probably for immediate munitions. In respect of Germany and Russia, there was probably some accumulation of reserve stocks. In respect of Great Britain there was probably some increase in the use of copper for industrial plant that may be employed for military purposes in the event of war. All around, however, the increase in the consumption of copper in Europe was probably industrial rather than military.

In the United States the major increase in copper consumption was in the manufacture of motor vehicles. There was a promising increase in building construction. A substantial increase took place in telephone plant. There was some increase in other electrification, including rural-line construction, but on the whole the demand from the public utilities continued to be disappointing.

Although consumption was thus increasing, deliveries from the refineries were running in excess of it as they had been doing ever since the beginning of 1935, for the reason that with the broadly upward economic trend the stocks of copper in the manufacturing processes had naturally to be increased, as to which both producers and fabricators were more or less blind. Consequently, instead of letting visible stocks in first hands simply shift into the invisible, new production was stepped up too fast.

Soon after the middle of the year foreign producers became conscious that production was running too large, and contraction began to appear in the monthly statistics. On Oct. 1 the international conference among the major producers who afford about 75% of the output ex-U.S.A., announced that their output was to be curtailed, effective Dec. 1, to the rate last in effect (105% of basic capacity), which had been adopted Nov. 5, 1936 and suspended Jan. 14, 1937.

In the United States producers soon afterward began independently to curtail their output for the reason

that they found themselves unable to sell the copper that they were producing. There was then just the opposite condition of what prevails on a rising trend in consumption, *i.e.* sales fall off most, deliveries ex-refineries less, mill shipments still less and real consumption least of all. In other words consumption is fed out of invisible stocks. From the standpoint of the producers this makes things look more gloomy than really they are, whereas the opposite condition makes them look more rosy. The history of 1937 is an illumination of this theory, both upward and downward.

The world's production of copper in 1937 will probably prove to have been about 2,400,000 short tons compared with 1,838,000 tons in 1936, but as hereinbefore suggested there were wide variations quarter by quarter. In the way of new development there was nothing of great importance. Mufulira, the last of the great concerns in Northern Rhodesia, arrived to full production, or nearly so. New explorations and developments were instituted in Africa, but fruiting of them will be in the distant future. Russia, which is gradually becoming a large producer, is ambitious to increase its output but experiences disappointments and still has to import some copper. Countries like Germany and Italy that possess no copper mines direct attention to the employment of substitutes for copper so far as possible.

LEAD

Lead participated in the speculative orgy that afflicted the other metals in the London market. In January the average price in London was £27.25; in March it was £33; and in April it was £26, following which the market declined and became fairly stable at £21–24, until October when a slump began and the price fell to £15.5 near the end of the year.

In the United States the price was steady at 5.85c. St. Louis into February. It peaked temporarily at 7.60c. in March, and after recession therefrom became stable again at about 5.85c. until October, following which it began to recede in common with the other metals and was reduced to 4.60c.

In general the American price conformed to the London pattern, but with more moderate fluctuations, a governing factor being the avoidance of importations of foreign lead, duty paid, which this market was unwilling to accept, having large stocks unsold in first hands. When the London price rose so sharply in the early part of the year American producers naturally took advantage of it, being temporarily immune from import danger.

Otherwise the history of lead in 1937 was rather uneventful. American producers were temperate and well guided in their behavior. Production was maintained steadily at about 43,000 tons per month. While consumption was increasing, especially during the first half of the year, and consequently deliveries ex-refineries, the increased requirements were fed out of stocks, which were reduced from 172,000 tons at the beginning of January to about 91,000 tons at the beginning of October. During the last quarter of the year a reversal began, but with no such unbalances as occurred in copper, for reasons hereinbefore explained, owing to the less complexity in the manufacture of lead products and consequently the less weight of invisible stocks.

Outside of the United States there was similar moderation in lead production, which was not materially increased during the period of bull speculation and was maintained throughout the year at monthly rates of 115,000 to 121,000 tons. There were some irregularities in the production of Spain, where some of the lead producing districts were in the zone of hostilities.

Estimating from the statistics that are available for the first 11 months of 1937 the total production of lead in the United States has probably been about 490,000 tons compared with 432,000 tons in 1936; and the production ex-U.S.A. will probably

be about 1,386,000 tons *vs.* 1,246,000 tons in 1936.

In respect of lead consumption in the United States a large increase in the use for cable covering was the most noteworthy feature. Outside of the United States the continued heavy building of houses was an important channel. Foreign consumption in the aggregate was probably in good harmony with production. At the end of 1937, therefore, the lead industry of the world was in a good statistical position and any concern was associated with fears as to consumption in 1938 rather than any existing incubus upon the market.

TIN

Conditions in tin in 1937 were so chaotic and controversial that in a brief review they can be no more than sketched. Among these conditions were mining problems resulting from about 70 per cent of the world's production being from alluvial deposits, crippling of Bolivian production by scarcity of miners owing to loss of them in the Gran Chaco war, and hampering by monetary difficulties introduced by the Bolivian Government, eccentric maneuvers by the International Tin Committee, and the same bull speculation that afflicted the other non-ferrous metals.

The year began with production scaled to 100 per cent of standard tonnages under the new international five-year tin restriction agreement. At the beginning of the second quarter the rate was raised to 110 per cent which obtained during the remainder of 1937. Even so none of the subscribing countries was able to make its permitted production with the exception of Malaya, and that was the only country with dormant plant, *i.e.* the ability to step-up. There arose, therefore, agitation among the producers for a revision of quotas.

The United States is obliged to import the whole of its tin supply, and consequently the American price follows Singapore and London. From a level of £230 in the early part of 1937 the price rose rapidly during March, with wide daily fluctuations, until the spot price reached the scarcity level of £311. The reaction was equally swift, and by the end of April the price had dropped to £250 at which level it remained up to the middle of the year. In the slump in the latter part of the year the price fell to £180, and at the end of 1937 it was approximately on that level. A price level that has fluctuated between £200 and £300 in one year is a denial of the steadying ability of even an international agreement among governments.

Estimating from the basis of statistics for the first 11 months, the world's production of tin in 1937 was about 197,000 long tons, compared with about 180,000 in 1936. Malaya continued to be the largest producer by far. On the authority of Sir John Bagnall, chairman of the Straits Trading Co., Malaya, that country has a surplus of tin producing plant and still possesses reserves of tin bearing gravel. According to Sir John a recent discovery in Johore gives indication and hope that Malaya will continue to be a large and cheap producer for many years to come.

Tin consumption in the United States in 1937 will probably figure to about 75,000 tons compared with about 73,000 in 1936. The proportion consigned to the manufacture of tin plate increases a little and in 1936 and 1937 was about 50 per cent of the total. Nearly all of our manufacture of tin plate is used for cans, and they being directly associated with current consumption our use of tin is more regular than that of the other metals which are more associated with construction.

On Dec. 10 the International Tin Committee fixed the quota for the first quarter of 1938 at 70 per cent of the standard tonnages, and at the same time the delegations for Bolivia, the Belgian Congo, and French Indo-China surrendered their right to fill their arrears, leaving the tonnages so surrendered to be divided among Malaya, the Netherlands East Indies, and Nigeria in proportion to their standard tonnages.

ZINC

The American price for zinc, like the price for lead, was governed largely by London, and for similar reasons. The courses of the markets for the two metals in 1937 were similar, but the events were quite different. In January the average price for spelter in London was about £21.25. In February it was about £33.4. There followed a decline and a stabilization at £21–23 during several months. Finally there was a slump in the fourth quarter and a fall to a level of about £15 in December.

The St. Louis price was 5.45–6c. in January, rising to a peak of 7.5c., which occurred in March, with a secondary peak at the same figure in April. The market then became fairly stable at 6.75–7.25c. for several months. There was a final slump in the fourth quarter, when the price fell to 5c., which prevailed at the end of the year.

The zinc market in the U.S.A. in 1937 was seriously affected by adversity to domestic production, especially during the first half of the year. Low water in the upper Missouri River deprived the great electrolytic plant at Great Falls of power and reduced its operation to a relatively small scale. Production was also curtailed by a prolonged strike of labor at one of the smelteries in Illinois. In those ways there was probably lost 60,000 tons of production during the first half of the year and, although physical conditions improved in the third quarter, Montana production was still handicapped.

Outside of the United States, production in Canada was curtailed by low water in the Columbia River, but that was in no wise so serious as in Montana. A strike of labor in Norway occurred and was somewhat restrictive. Elsewhere, however, metallurgists were able to operate at full capacity, and increased supplies of ore, induced by the high level of prices, began to pour in on them. It is to be observed that, while lead production is closely integrated, as is copper production, zinc production is largely dissociated as between miners and metallurgists, and it is the production from the mines, scattered all over the world, that is the basic, determining factor.

Consequently while the domestic position was inherently strong through increasing demand, physically restricted output and no very large accumulation of unsold stocks in first hands, the foreign position was steadily weakening. Toward the middle of the year the disparity between the American and European prices became such that foreign spelter was able to jump the hurdle of freight and tariff, and large sales of foreign spelter were made for delivery in this market and were cheerfully accepted by American interests who were themselves unable to meet the demand.

This is a broad digest of the history of zinc in 1937, which is numerically shown by the statistics. At the beginning of 1937 there was a domestic stock of spelter of 45,000 tons, which was less than the consumption requirement of one month. At the end of August this was only a little more than 11,000 tons. Concurrently no stock had accumulated in the form of ore. Up to the end of November imports of foreign spelter had been about 37,500 tons as spelter, besides 8,500 tons in ore, which will probably be our total imports for the year.

Estimating from the statistics that are available for the first 11 months of 1937 the production of spelter in the United States was about 590,000 tons *vs.* 523,000 in 1936. Outside of the United States it was about 1,265,000 tons *vs.* about 1,127,000 tons in 1936. A large part of the production both at home and abroad is now made by the electrolytic process. Roughly it may be estimated that, of the world's present production, about 50 per cent is high grade, 99.95 per cent zinc and upward, mainly electrolytic, but partly distilled.

There were no new metallurgical plants built in 1937, but one of the American plants entered upon en-

largement, which is about completed. This will afford increased production from the Coeur d'Alene district. Among mining districts attention is being given to Metalline Falls in Washington. The old silver mines of Pioche, Nevada, are becoming an increasing source of domestic zinc and promise to become even more important than at present when some new mill construction is completed. Outside of the United States it is probable that Argentina, Peru, and Jugoslavia will become more important producers than at present. The great Reocin mines in Spain were in the zone of severe fighting, but with the conquest of the Asturias they passed into the area of Franco's government.

PETROLEUM

By Axtell J. Byles

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GENERAL

In the annals of the petroleum industry 1937 will be known as the year which shattered all previously established records in the production, refining, and the demand for petroleum products. Despite their unprecedented pace, operations in all divisions of the industry proceeded with a high degree of orderliness. The petroleum tax bill also was higher than in any prior year.

CRUDE OIL

World and Domestic Output.—World production of crude oil reached an estimated total of 2,015,000,000 barrels, an increase of 13 per cent over that of 1936, the previous peak year. Of this total, the United States accounted for 1,280,000,000 barrels, or approximately 63 per cent. This was an increase of 181,484,000 barrels over 1936 when 1,098,516,000 barrels were produced.

PRODUCTION OF CRUDE PETROLEUM

(In barrels of 42 U. S. gallons)

Year	United States	Rest of World	Total World
1933	905,656,000	536,456,000	1,442,112,000
1934	908,065,000	614,178,000	1,521,605,000
1935	993,596,000	659,873,000	1,653,469,000
1936	1,098,516,000	685,948,000	1,784,464,000
1937 (Est.)	1,280,000,000	735,000,000	2,015,000,000

Exploration and Drilling Activity.—Thousands of workers engaged in oil well drilling operations found 1937 the busiest 12-month period in nearly two decades. The estimated total number of wells drilled, at 32,500, fell only a little short of the number drilled in the all-time peak year 1920. Of the 32,500 wells completed, 23,700 produced oil and 2,500 natural gas. The remainder were non-productive "dry holes." The ratio of dry holes to total number of wells drilled in 1937 was 19.4 per cent as against 20.4 per cent in 1936. Of special interest not only to the industry but to the consuming public was the progress made in the technique of deep well drilling. By perfecting both methods and equipment, petroleum engineers have made it possible to penetrate more than two miles into the bowels of the earth in the search for petroleum. At such depths are located pools of oil which could not be reached with the drilling technique of ten years ago. The number of 10,000 ft. tests reported is steadily increasing and this development is helping materially to expand the nation's crude oil reserves.

WELLS COMPLETED IN THE UNITED STATES

Year	Oil	Gas	Dry	Total
1933	8,073	923	3,318	12,314
1934	12,520	1,368	4,309	18,197
1935	15,108	1,401	4,911	21,420
1936	18,523	2,070	5,297	25,890
1937 (Est.)	23,700	2,500	6,300	32,500

Storage.—While crude oil in storage as of Dec. 31, 1937 was estimated to have increased approximately 5.5 per cent over Dec. 31, 1936, total stocks at 304,000,000 barrels were still approximately 130,000,000 barrels below the all-time peak reached Oct. 31, 1929. They were lower also than stock levels that obtained in the years 1931 through 1933, when annual crude oil production was from 327,000,000 barrels to 495,000,000 barrels below that estimated for 1937.

CRUDE OIL IN STORAGE AT END OF YEAR

(In barrels of 42 gallons)

1931	379,919,000
1932	339,715,000
1933	355,312,000
1934	337,254,000
1935	314,855,000
1936	288,184,000
1937 (Est.)	304,000,000

Foreign Trade.—A marked rise in exports of crude petroleum featured in 1937 foreign trade statistics. Estimated at 63,000,000 barrels, 1937 exports of crude oil were more than 25 per cent above those of 1936. Imports, on the other hand, exhibited a slight downward trend, having declined an estimated 2,327,000 barrels, or approximately 7 per cent.

FOREIGN TRADE IN U. S. CRUDE PETROLEUM

(In barrels of 42 gallons)

Year	Imports	Exports
1933	31,893,000	36,584,000
1934	35,558,000	41,127,000
1935	32,239,000	51,430,000
1936	32,327,000	50,184,000
1937 (Est.)	30,000,000	63,000,000

Prices.—On Jan. 28, 1937, the price of crude oil which had been $1.10 per barrel for basic grades since Jan. 9, 1936, was raised to $1.22 per barrel.

CRUDE OIL PRICES

(Per barrel of 35 deg. A.P.I. gravity Mid-Continent oil)

Year	High	Low
1933	$1.00	$.25
1934	1.00	1.00
1935	1.00	1.00
1936	1.10	1.00
1937*	1.22	1.10

(*Up to Sept. 23, 1937)

PETROLEUM REFINING

Volume.—With demand for the industry's most important products—motor fuel and fuel oil—breaking through to new high levels, refineries had to operate at a heretofore unprecedented pace. Crude runs to stills totaled an estimated 1,180,000,000 barrels, up 112,000,000 barrels, or 10.5 per cent, from the previous year, and approximately 30 per cent above the pre-depression peak year, 1929.

CRUDE OIL RUN TO STILLS

(In barrels of 42 gallons)

1933	861,254,000
1934	895,636,000
1935	965,790,000
1936	1,068,134,000
1937 (Est.)	1,180,000,000

Motor Fuel.—A rise in motor vehicle registrations amounting to virtually 2,000,000 cars and trucks, plus increased consumption per motor vehicle, ocasioned a rise in motor fuel output of 50,000,000 barrels compared with 1936. Total production of motor fuel in 1937 was estimated at 555,000,000 barrels, as against 504,724,000 barrels in 1936, an increase of 10 per cent. Production in 1937 was 28 per cent greater than in the pre-depression peak year of 1929. Total domestic consumption of motor fuel in 1937, estimated at 21,798,000,000 gallons, had an approximate retail value of $3,160,000,000. From its sale, Federal and state governments derived approximately one-third of its value in sales tax revenues.

MOTOR FUEL PRODUCED IN U. S. REFINERIES

(In barrels of 42 gallons)

1933	401,591,000
1934	416,932,000
1935	457,842,000
1936	504,724,000
1937 (Est.)	555,000,000

Refinery Operation.—A total of 425 refineries were estimated to have been in operation as of Jan. 1, 1938, as against 423 refineries reported operating as of Jan. 1, 1937. While the total number of refineries remained virtually unchanged during the year. oil companies nevertheless spent millions of dollars in refinery construction, mostly in additions to existing plants in modernization of obsolete equipment. Petroleum research is constantly developing improved equipment for processing, thereby necessitating frequent modernization of plant.

REFINERIES IN OPERATION IN THE UNITED STATES

January 1, 1933	372
January 1, 1934	454
January 1, 1935	435
January 1, 1936	422
January 1, 1937	423
January 1, 1938	425

Refined Products.—Practically all of the more than 300 products of petroleum refineries participated in the general rise in demand; hence were produced in greater volume than ever before. Production of gas oil and fuel oil rose to an estimated 442,000,000 barrels, up 7.5 per cent from the previous year when 411,338,000 barrels were produced. Greater industrial and motoring activity, improved farm purchasing power, and increased road building programs served materially to raise the output of such commodities as kerosene, lubricants, waxes, asphalts, road oils, etc.

GAS OIL AND FUEL OIL PRODUCED IN U. S. REFINERIES

(In barrels of 42 gallons)

1933	316,439,000
1934	335,353,000
1935	360,061,000
1936	411,338,000
1937 (Est.)	442,000,000

Foreign Trade.—An appreciable gain was recorded by exports of refined products for the first time in at least five years. The 102,000,000 barrels of refined petroleum products estimated to have been shipped to foreign countries in 1937 meant an increase of 28.5 per cent over the previous year. Imports showed an increase of approximately 8,500,000 barrels.

FOREIGN TRADE IN REFINED PETROLEUM PRODUCTS

(In barrels of 42 gallons)

	Exports	Imports
1933	69,942,000	13,501,000
1934	73,149,000	14,936,000
1935	77,208,000	20,396,000
1936	79,377,000	24,491,000
1937 (Est.)	102,000,000	33,000,000

MARKETING

Increased Demand.—Despite unprecedented demand, taxing distribution facilities to the full, the industry's marketing division was able to provide motorists and other users of petroleum products with the same smooth and uninterrupted service to which they have long been accustomed. More than 200,000 new installations of oil burners brought the total now in operation in factories and homes to nearly 1,700,000. This was one of the principal factors responsible for lifting fuel oil consumption to new high levels.

MOTOR FUEL DEMAND

(In barrels of 42 gallons)

	Domestic Demand	Total Demand
1933	380,494,000	409,815,000
1934	410,339,000	435,025,000
1935	434,810,000	465,423,000
1936	481,591,000	509,422,000
1937 (Est.)	519,600,000	554,100,000

GAS OIL AND FUEL OIL DEMAND

(In barrels of 42 gallons)

	Domestic Demand	Total Demand
1933	323,705,000	344,268,000
1934	340,371,000	368,976,000
1935	366,723,000	395,671,000
1936	408,991,000	443,271,000
1937 (Est.)	455,000,000	498,000,000

ESTIMATED NUMBER OF OIL BURNERS IN OPERATION

End of Year	Industrial	Domestic	Total
1933	34,200	920,300	954,500
1934	47,100	1,014,100	1,061,200
1935	60,600	1,154,700	1,215,300
1936	77,500	1,352,700	1,430,200
1937 (Est.)	95,500	1,587,500	1,683,000

Prices.—The wholesale price level of petroleum products, according to the U. S. Bureau of Labor Statistics, still remains at about 40 per cent below normal, virtually unchanged from a year ago. Wholesale prices of all commodities, on the other hand, have advanced to within 12 per cent of normal, rising approximately 10 per cent in the first seven months of 1937. Prices of petroleum products for years have been relatively lower than the general price level.

INDEX OF WHOLESALE PRICES

(1926 = 100)
(U. S. Bureau of Labor Statistics)

	Petroleum Products	All Commodities
1936–July	58.1	80.5
August	57.9	81.6
September	57.5	81.6
October	57.9	81.5
November	58.1	82.4
December	58.0	84.2
1937–January	58.3	85.9
February	59.1	86.3
March	58.6	87.8
April	59.8	88.0
May	60.9	87.4
June	61.5	87.2
July	61.8	87.9

MOTOR FUEL PRICES, TAXES, AND COSTS

Year	Average Retail Price	State and Federal Taxes	Average Total Cost per Gallon to Consumer
1933	$.1241	$.0541	$.1782
1934	.1364	.0520	.1884
1935	.1355	.0529	.1884
1936	.1410	.0535	.1945
1937 (7 months)	.1457	.0539	.1996

In a year that was marked by appreciable retail price increases for most everyday necessities, the price of gasoline, despite a record-breaking demand, remained virtually unchanged. At its present average of 14.57 cents per gallon, gasoline is still selling at less than half the 1920 price, notwithstanding the great improvements in quality of motor fuel which have since been effected.

Gasoline Taxes.—Motorists, unfortunately, are not left to enjoy the full benefit of reduced motor fuel prices; state and Federal gasoline taxes now averaging 5.39 cents per gallon absorb a substantial part of the saving. Gasoline, with a retail sales tax averaging 37 per cent, is the most highly taxed of all essential commodities in everyday use.

Over a period of years the individual motorist has seen the tax component of his yearly motor fuel bill grow ever larger. In 1925 taxes added only about 10 per cent to the cost of gasoline. Since that year the price of gasoline has materially declined, while taxes have progressed in the opposite direction until they now add 37 per cent to the cost of motor fuel.

GASOLINE TAXES PAID BY CONSUMERS

	State	Federal	Total
1932	$513,047,239	$ 62,839,827	$575,887,066
1933	518,195,712	181,125,988	699,321,700
1934	565,027,000	170,109,269	735,136,269
1935	616,851,671	172,262,481	789,114,152
1936	686,631,000	186,321,448	872,952,448
1937 (Est.)	766,000,000	200,000,000	966,000,000

ESTIMATED ANNUAL COST OF MOTOR FUEL AND TAXES PER CONSUMER

(Based upon the use of 600 gallons annually, and average tax rate)

	Cost of Fuel	Cost of Taxes
1925	$120.54	$12.66
1929	107.52	21.00
1935	81.30	31.74
1937*	87.42	32.34

(* On basis of first nine (9) months' prices)

TAXES AND EARNSING

Preliminary figures now available indicate that the industry in 1937 continued to bear a disproportionate share of the tax burden. For the past five years levies imposed upon the operations and products of the industry have contributed one out of every eight tax dollars collected by Federal, state, and local governments. At the same time the industry's total investment accounts for only about 4 per cent of the national wealth.

The 1936 petroleum tax bill aggregated $1,180,876,000, including gasoline taxes. This sum was little short of the industry's annual payroll. In the same year petroleum industry earnings were placed at $349,664,240, or 29.6 per cent of taxes. In the 16-year period, 1921 through 1936, oil companies reported aggregate earnings of $2,323,701,991. This sum is equal to 25 per cent of total petroleum taxes paid during the same period amounting to $9,215,936,381.

PETROLEUM INDUSTRY EARNINGS AND TAXES

	Investment	Net Earnings	Per Cent Earned	Total Taxes
1933	$12,300,000,000	$123,097,000 deficit	−1.00	$1,004,824,000
1934	12,700,000,000	59,304,437	0.47	1,046,149,575
1935*	13,276,000,000	172,761,632	1.30	1,127,259,232
1936*	13,775,000,000	349,664,240	2.54	1,180,876,256

*(Estimated)

PROVEN PETROLEUM RESERVES OF THE UNITED STATES

(As of Jan. 1, 1937)

	Barrels
California	2,956,000,000
Rocky Mountain States	
Wyoming	239,000,000
Montana	92,000,000
Colorado	15,000,000
	346,000,000
Central to Southern States	
New Mexico	471,000,000
Texas	6,422,000,000
Oklahoma	1,141,000,000
Kansas	568,000,000
Arkansas	84,000,000
Louisiana	524,000,000
	9,210,000,000
Eastern States	
Illinois	28,000,000
Indiana	3,000,000
Kentucky	39,000,000
Michigan	44,000,000
New York	66,000,000
Ohio	32,000,000
Pennsylvania	307,000,000
West Virginia	32,000,000
	551,000,000
Total — United States	13,063,000,00

PETROLEUM RESERVES

In the report to the board of directors of the American Petroleum Institute, the Institute's Committee on Petroleum Reserves, composed of outstanding petroleum geologists, revealed that the nation's proved reserves of crude petroleum as of Jan. 1, 1937 totaled 13,036,000,000 barrels. This was an increase of 886,000,000 barrels over the estimate of these reserves as of Jan. 1, 1935. During this two-year period 2,044,000,000 barrels of petroleum were produced, according to the committee; but discoveries of new pools and development of old ones have covered this and added 886,000,000 barrels to proved reserves.

The committee was careful to point out that its figures covered only that part of the nation's underground reserves of petroleum proven by development to exist and recoverable by methods now in general use and that no attempt was made to calculate potential new discoveries in undeveloped areas, the geological formations

of which are not unfavorable to the presence of oil.

EMPLOYMENT AND PAYROLLS

The industry's workers continue to enjoy better than average working conditions. Official government statistics reveal that employees in oil fields and refineries are among the most highly paid workers in all industry. It is estimated that the industry provides jobs for 1,000,000 workers whose annual wages aggregate close to $1,500,000,000.

PETROLEUM RESEARCH

Research projects covering all phases of petroleum operations are constantly being carried on. Estimated annual cost of research to the industry is placed at $12,000,000 to $14,000,000. Improved equipment and more efficient methods of operation which have resulted from this work have been among the principal factors in keeping prices of petroleum products at their present low levels.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ASSN. OF PETROLEUM GEOLOGISTS, Box 1852, Tulsa, Okla.

AMERICAN GAS ASSN., 420 Lexington Ave., New York City.

AMERICAN INSTITUTE OF MINING & METALLURGICAL ENGINEERING, 29 W. 39th Street, New York City.

AMERICAN IRON AND STEEL INSTITUTE, 350 Fifth Ave., New York City.

AMERICAN MINING CONGRESS, 841 Munsey Bldg., Washington, D.C.

AMERICAN PETROLEUM INSTITUTE, 50 West 50th St., New York City.

AMERICAN PETROLEUM INDUSTRIES COMMITTEE, 50 West 50th Street, New York City.

AMERICAN ZINC INSTITUTE, 60 E. 42nd Street, New York City.

DIVISION XIII

MANUFACTURES AND TRANSPORTATION

CONDITIONS IN MANUFACTURING

By L. Seth Schnitman

Consulting Economist, New York

GENERAL

Few years in American industry have seen the extremes which characterized the year 1937. Begun with confidence virtually unbounded, the year ended on a note of near-defeatism. Just as the first Federal census of unemployment revealed a probable total of about 11,000,000 men and women out of work, as if to make matters worse, the government's goring of industry took on a new lease of life. And thus 1938 inherits all of the uncertainties which made the extremes of 1937 possible. The problems which should have been met squarely, as much by industry as by labor and government, still linger on.

Just at a time when government had apparently begun to believe that the vagaries of the business cycle could be largely controlled through instruments of its own making, the country was confronted by perhaps the greatest and most drastic downward reaction in industrial activity ever to be compressed within so short a period. It is of less moment to argue the causes than to present the fact that as 1937 became history an economic impasse had virtually been reached. Whether founded or unfounded, industry and commerce have exhibited one of the most intense cases of jitters in two generations. This occurred at a time when Federal spending and pump-priming were on the decline, when prices of many raw materials had skyrocketed beyond reason, and when the nation was visited with an unprecedented rise in labor strife.

Whereas the days of pseudo-prosperity of the 1920's had been largely financed out of an unparalleled development and growth of private debt, the recent recovery was supported by an unexampled rising spiral of public debt. Where in the recovery period culminating with the speculative collapse of 1929, Federal tax schedules and rates were being lowered progressively, the recent recovery witnessed a broadening tax base and rising rates. Small wonder that manufacturers and business men generally, as a means of self-preservation, should have curtailed their payrolls drastically at the first signs of gathering economic clouds.

INDUSTRIAL PRODUCTION

The quantitative output of mines and factories during 1937, as measured by the weighted index of the Federal Reserve Board, was almost five per cent greater than it was in 1936, thus rounding out a period of five years wherein each annual average of industrial output was higher than each preceding year. For 1937 the index of physical volume of production approximated 110, based on the average of 1923–1925 as 100; this was more than 70 per cent above the record-low level of production reported in 1932. In spite of this improvement, the 1937 performance was some seven per cent below the 1929 index figure of 119, and it must here be noted that no allowance is made

in the computation of the index for population growth.

This index, as do all averages, obscures some really important cross currents. It is necessary, therefore, to record some of these to reflect adequately what really took place in this eventful year: (1) industrial production as measured by the seasonally-adjusted index for December, 1936 stood at 121 on the 1923–1925 base; incidentally, this was the highest point of the recovery movement; (2) largely traceable to strikes in the automotive world the January, 1937 index dropped to 114; (3) with labor difficulties in the automobile and related industries apparently settled, the index rose for February and March but never attained the December, 1936 level; (4) the average for the initial quarter of 1937 fractionally exceeded the average for the final quarter of 1936 and was more than 20 per cent greater than was reported for the corresponding first quarter of 1936; (5) for April of 1937 no change was seen from the March index of 118, nor was any change shown for May, but June showed a decline of modest proportions; (6) the second quarter of the year averaged fractionally better than the first quarter and represented the high-water mark of the recovery period; the production index for the second quarter showed a gain of approximately 14 per cent over the corresponding quarter of 1936; (7) the third quarter of 1937 started with an index of 114, unchanged from June, expanded to 117 in August and closed with a September figure of 111; (8) the third quarter average was not only lower than the average for the second quarter but showed a gain over the third quarter of the preceding year of less than 6 per cent; (9) from this point on declines were precipitous with the December index reaching a level of about 85 and the average for the final quarter of the year almost 20 per cent below the average for the last quarter of 1936.

Whatever the causes for this erratic performance three appear as of major importance: (1) labor strife, (2) rapidly advancing costs and prices, due in part to international speculation and the race for armaments and (3) the collapse of raw material prices.

For manufacturing production alone, as apart from mineral production, the Federal Reserve Board index for 1937 worked out at about 110 based on the 1923–1925 average as 100. This represented a gain over the 1936 index of 105. For mining production, the 1937 index was 111 and represented an increase of about five per cent over the 1936 figure. Of all industries included in the index of manufacturing production, most showed larger volume in 1937 than in the three-year period, 1923–1925. Likewise most important industries, such as iron and steel, automobiles and cotton textiles, showed production gains over their respective 1936 totals.

Of the industries included in the index of mining output, crude petroleum and non-ferrous metals were the more important ones to show larger production in 1937 than in the base period. Compared with 1936, gains in virtually all branches of mining with the chief exception of coal, were reported over 1936.

CONSUMERS' GOODS INDUSTRIES

In spite of sharp shrinkage in demand during the final half of the year the production of staple cotton goods reached a new high point in 1937. Yet during the year prices suffered the most drastic decline in almost a score of years. This shrinkage of prices, which wiped away virtually half of earlier values, not only seriously affected profits but so completely demoralized the trade that much distress selling made its appearance as the year drew to a close, a striking contradiction to the scramble for goods in the early months of the year. But, with this moving of goods at a price, came a bettering in the inventory condition and consequently improved prospects for early resumption of cotton mill activity on a broader base.

The woolen industries likewise started 1937 under seeming auspi-

cious conditions with a good backlog of forward orders, chiefly for men's and women's wear fabrics. As was true in the case of the cotton trades, wages to mill hands were increased, as were prices for raw materials, with the result that speculative buying on the part of clothing manufacturers materially expanded in the mad rush to beat even further anticipated price advances. But this did not last—speculation hardly can—and 1937 ended with wool consumption at a very low ebb, although for the first quarter it had exceeded, with only one exception since 1923, every other quarterly period. Industry profits, largely because of drastic write-offs for inventory depreciation, were practically non-existent.

The same story could be written about the shoe industry—a chronology of large unfilled orders at the beginning of the year, confidence high, prices for raw products rising and for finished goods as well, mounting wages, a drop of almost half in prices of raw materials in four months and liquidation of inventories of shoes at a price. Over-production and too confident forward buying had again gripped the industry that so frequently has been plagued with the same disease.

The rug and carpet industry during the initial half of 1937, on the heels of an expanding national income, was riding high. Here also came new demands for more labor and higher wages and higher prices both for raw materials and finished goods. Then prices started to slip as demand dried up, and the downward spiral began.

Household furniture started the year 1937 with operating schedules in the factories at levels reminiscent of 1929. But as the year wore on many of the strictures that gripped other industries constricted sales and brought on the inevitable reversal in productive activity. Year-end inventories of furniture both in manufacturers' hands and in the hands of dealers were heavy in relationship to the current volume of sales.

Cigarette consumption made a new all-time high in 1937. The volume of manufactured foods produced during the year was generally heavier than in 1936. Prices for meats rose so precipitately that in some sections of the country meat strikes occurred; the year closed with much lower prices than prevailed at mid-year.

PETROLEUM AND REFINERY PRODUCTS

The petroleum industry in 1937 broke all production records. Likewise the consumption of all classes of petroleum products made a new all-time high. The consumer demand exceeded the 1936 volume by about 10 per cent and was some 25 per cent greater than in 1929. Unlike most other basic industries, wage payments in the petroleum industry in 1937 were at a new high-water mark.

As the year ended, however, crude oil stocks were on the increase because demand was lagging behind current production, thus giving rise to price uncertainties. At the same time gasoline prices weakened late in the final quarter with a rapidly mounting supply. And demands that proration be continued and extended in order to eliminate the possibilities of over-production were becoming more voluble.

ELECTRIC UTILITIES AND RAILROADS

The production of electric power in 1937 exceeded all previous records and was almost 30 per cent ahead of the 1929 level. But oddly enough, although this productive level taxed the capacity of the industry, uncertainties as to taxes and governmental competition kept construction expenditures on the part of utilities at a comparatively low level, with the result that this industry contributed relatively little toward the stimulation of needed activity in the capital goods lines.

For railroads the improvement of the three preceding years was extended during the first half of 1937. But from then on, rising costs of materials and labor and declining volume of traffic made difficult the position of the industry which never really had emerged from the de-

pression. Consequently purchases by railroads of needed equipment and rails melted away as the year wore on and a-glimmering went the hopes for stimulation to the heavy industries from this one-time important customer. Although some freight rate advances were granted by the Interstate Commerce Commission and more were asked by the railroads, the year ended with a general admission that what the railroads needed most was a larger volume of freight.

IRON AND STEEL

The output of pig iron in 1937 totaled almost 37,000,000 tons for a gain of about 20 per cent over the total produced during 1936; in 1929 the pig iron production volume totaled more than 42,000,000 tons. Steel ingot production during the year approximated 49,000,000 tons as against 47,800,000 tons in 1936 and 54,300,000 in 1929. At the start of 1937 the steel industry was operating at almost 80 per cent of rated capacity; at the end of 1937 operations were down to a level of only about 20 per cent of capacity. This drastic shrinkage in the rate of steel output strikingly symbolizes the speed with which the complexion of industry generally can change from one of extreme optimism to helpless pessimism. At no time for which comparable figures are available has the contraction in steel operations been so steep as during the final seven months of 1937; from a spring peak in excess of 90 per cent of capacity, the industry closed the year at a snail's pace with little promise for any important nearby improvement, except as may arise out of an intensive armament program for which public opinion was rapidly being crystallized.

Exports of iron and steel products, largely because of continued expansion of rearmaments abroad, showed broad expansion during the year; in fact the 1937 export movement was larger than for any other year since 1920. Shipments of scrap steel to foreign customers, largely to Japan, were virtually double the 1936 volume. Further expansion of steel mill capacities took place in 1937, chiefly in the finishing branch of the industry, but no important additional extension of capacities in continuous strip and rolling mills appears probable for 1938, unless domestic demand for semi-finished and finished steels is soon to be augmented by a materially enlarged armament program of our own. That such a program is probable there can be little dispute. If it does not flow out of the recent rise in the war psychosis it will probably come out of the need for restimulating the capital goods industries wherein unemployment has again become severe. The facts seem to favor an increase in program of national defense on both counts.

No comment on the steel industry would be complete without reference to the intense labor strife, both apparent and real, which characterized the early months of the year and which brought in, by way of settlement, increases in wages, higher prices for steel products, and greater rigidities in the cost structure. Wage and other labor agreements obtained early in 1937, and presently expiring, will again be taken up early in 1938. These negotiations are likely to have considerable effect on the prices for steel products, which as 1937 ended were still held too rigidly to levels not supportable by factors of supply and demand.

COMMODITY PRICES

Extremes in industrial activity are often best told in price fluctuations of basic or key commodities. From their 1937 highs, made in the spring of the year to their low points, for the most part made in December, the declines in the prices for raw materials were severe. For cotton the shrinkage amounted to about 44 per cent; for copper the loss was about 40 per cent; for rosin it exceeded 50 per cent; for scrap steel the loss amounted to some 42 per cent; for lead, a decline of about 38 per cent was suffered, with about as much for tin and hides. Averaging all important raw products a price decline in excess of 35 per cent

occurred between the spring high and the 1937 low.

Wholesale prices for finished goods showed some weakening in the closing months of the year but the deterioration in prices for finished goods was much less marked than was true of raw products. Likewise the cost of living during the latter part of 1937 showed some decline but this was not commensurate with the loss sustained in the national income.

LABOR AND EMPLOYMENT

Struggle for place under the sun attained fever heat in the labor world during 1937. Conflict was just as intense between the American Federation of Labor and the Committee of Industrial Organization as it was between labor generally and management. Labor gained much but lost much, too, in pressing too hard the bargains it had struck. In the final analysis, productivity of labor at a profit to management is the only key to continued wage payments. For 1937 factory employment, based upon the 1923–1925 average as 100, was about 97; for 1936 it averaged 92; for 1932 it was only 66; but in 1929 it was 105. Factory payrolls, on the same base, averaged about 97 for 1937 as compared with only 82 for 1936; in 1932 the index was only 46 while in 1929 it was 109. Both in the case of factory employment and factory payrolls, the 1937 indexes showed relatively greater improvement over 1936 indexes than was the case in industrial production; as a matter of fact the gain in payrolls was almost three times as great as the gain in industrial production. Part of the growing unrest in the labor field in 1937 was met by an extension of profit-sharing plans, but these were not in sufficient volume to offset adequately the claims of labor which always accompany mounting industrial profits.

INDUSTRIAL EARNINGS AND DIVIDENDS

Industrial profits during the first nine months of 1937 were generally high—higher for the most part than for any other year since 1929. But results for the final quarter materially altered the complexion for the full year; particularly was this true because of needed adjustments in inventories to the lower price levels which sluggish demand created. Industries to show profits in excess of 1936 totals included oil, electrical manufacturing, aircraft manufacture, copper refining and metal mining. While the steel industry gave a very creditable performance as to earnings during nine months of the year, for the most part no earnings were available on operations for the final quarter. The automobile industry, of all the more important industries, suffered rather severely; despite a larger production total, 1937 earnings were materially below the profits reported for 1936.

In spite of the drastic decline in industrial output in the last quarter of 1937, dividend payments to stockholders not only exceeded the 1936 total but were larger than for any other year since 1930. Disgorging of profits was partly due to the operation of the undistributed profits tax which carries a graduated penalty on undistributed earnings ranging from seven to 27 per cent. Incidentally, flotations of new bond issues by industrial corporations during 1937 were only about one-fourth the volume of the preceding year.

FOREIGN TRADE

The total volume of foreign trade in 1937 approximated $6,400,000,000, with an export excess of about $100,000,000. The foreign trade volume for 1937 thus represented a gain over 1936 of about 30 per cent, part of which was due to higher prices. Much of the improvement in the export movement was traceable to increased takings abroad of American produce for armament purposes; especially was this true in the case of iron and steel, scrap steel, sundry finished manufactured goods and automobile trucks.

AUTOMOBILE PRODUCTION

Automobile production in 1937 reached a total just short of 5,000,000

units, both passenger cars and trucks. This was a gain of about eight per cent over the 1936 figure and was about three and one-half times the size of the 1932 total. In 1929 the automobile production total exceeded 5,350,000 units.

Of the 1937 total, passenger cars numbered about 4,000,000 units while trucks totaled about 950,000; the production total for trucks during 1937 was greater than was shown for any other year. Despite the general increase in automobile output recorded for 1937 as a whole, as the year came to a close the industry was generally on lower production schedules than at any comparable period in at least three years, with unemployment rapidly spreading through the industry and allied trades.

Stocks of new cars in dealers' hands at the year-end as well as dealers' stocks of used cars were probably larger in relation to current sales volumes than at any time in five years. Much of the labor strife in the automobile industry, so evident in the late days of 1936, carried over into 1937. Strikes settled, new ones, authorized and unauthorized by labor leaders, recurred in 1937 with consequent large losses in wages, large rises in production costs, higher prices for cars, which, in their interactions, the whole economy just could not absorb. Still one thing more must not be forgotten: the automobile industry in 1937 was rounding out five years of continuous recovery since the 1932 low-point, a longer period of sustained rise than it ever before had enjoyed, except for the infant days of the industry.

Because of this consideration, bulwarked by a generally weakened national income and consumer purchasing power, the year 1938 seems destined to show smaller output of automobiles than was reported in 1937; indeed it would be a pleasant surprise if the 1938 production total were to exceed the figure of about 4,000,000 units reported for 1935. Under such circumstances, it is small wonder that emphasis on the need for reviving the building industries became so pronounced in the latter days of 1937.

Automobile registrations at the end of 1937 reached a new all-time high. Exports of automobiles showed a pronounced improvement over the figure for the preceding year, with the greatest advance occurring in foreign purchases of American-made trucks, probably partially due to armament demands.

CONSTRUCTION

The 1937 volume of construction, on the basis of F. W. Dodge Corporation figures, exceeded the 1936 total by about eight per cent. But there is nothing of the boom in this performance which was so freely predicted at the 1936 year-end. High costs, probably as much as any other single cause, tended to restrain expansion in construction, especially in the field of private housing. Residential building ended the year with an increase of roughly 15 per cent over the dollar volume reported for 1936. Commercial and factory building each showed better gains over their respective 1936 totals. But the volume of construction work on public projects of every description showed an appreciable contraction from the 1936 level of operations.

With the decline in general industrial activity, popularly termed a "recession," renewed pressure for stimulating the housing industry, both public and private, became evident. In the closing days of the regular session of Congress, legislation was enacted calling for a $526,000,000 slum clearance and low-rental public housing program. In the closing days of the special session of Congress, both Houses passed legislation to liberalize the financing terms of the National Housing Act and the regulations of the Federal Housing Administration to provide stimulus to private housing operations, but the session adjourned before the differences between the two Houses could be composed in committee.

But reform is more necessary in the archaic customs that grip the industry than in the field of finance if a truly important attack on the problem of costs is to be made. Release is needed

from the rigidities that have circumscribed building tradesmen for years—rigidities and limitations as to apprentices, jurisdiction, hours of labor, and productive output. Lower costs for materials are also needed. But there is no royal road for stimulating synthetically the building industries. Neither lowered costs for materials or labor nor mortgage money can alone provide the basis for sustained revival. Much more is needed—a return to fundamentals; private building in large volume will be undertaken only when it is profitable to do so.

From this standpoint the prospects for private construction in 1938 are not particularly promising, and this quite regardless of what governmental efforts may be employed to stimulate building operations. At the same time building prospects in the public field do not appear especially bright if the intention to balance the budget is to be carried out even in the face of mounting relief needs.

Most items of building materials and equipment quite naturally showed larger production and shipment in 1937 than in the preceding year. But from mid-year on production was generally exceeding the current rate of consumption. Inventories of building materials generally at the 1937 year-end were much more burdensome than at the previous year-end, both as respects manufacturers and dealers. As a result prices showed some weakening even without the threat, real and apparent, of investigation into the price structure by the Federal Government.

CONCLUSION

There has been nothing of the weak banking structure which crumbled in the early days of 1933 nor has there been any of the large business failures and receiverships which characterized the Great Depression. But there has been a period of mounting distrust and growing fear which involve banking failures and insolvencies. The conditions of the times demand a quick appraisal that the country may avoid pitfalls not of a weakened financial structure or even of business mechanisms but of a slowly sinking general economy against which shoring of only one segment would be of little avail. With distrust still riding high its causes must be removed if the current attitude which feeds on it is to be reversed. If this means a balanced budget, lower and more equitable taxes, and release from some of the other constricting forces the move should be made. If it means more spending, at whatever cost, this step must be taken fearlessly. For uncertainty is far more devastating at this juncture than decisive action would be even should such action ultimately prove to have been taken unwisely. Whether 1938 can resolve the problem is of less moment than that it needs to be resolved quickly lest the recession deepen, only to be characterized later as another depression of depth and proportions not now predictable.

CONDITIONS OF INTERNAL COMMERCE

By Ada Lillian Bush

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BASIC PRODUCTION

Total volume of industrial production for the first 11 months of 1937 was 8.7 per cent above the average for the same period in 1936 despite the sharp recession that set in after August of the current year. Throughout the first eight months, the output in major industries more than sustained the upward trend which had given 1936 a production record that surpassed the average for the preceding year by 15.9 per cent (see The American Year Book, 1936, pp. 483-485). However, the rapid decline that was in evidence during September continued at an accelerated rate in the closing months of

1937, bringing production in the final quarter down to the lowest level since the third quarter of 1935.

INDIVIDUAL INDUSTRIES

Highlights from comparable averages for 11 months of each year show percentage rises in 1937 from 1936 totals as follows: steel ingot production, 13 per cent; number of automobiles produced, 13 per cent; value of residential building contracts awarded, 17 per cent; and value of total construction contracts awarded, 9 per cent. For none of these industries, however, does the reported gain, adjusted for seasonal variations, represent steady progress throughout the year. Following peak activity in earlier months which extended through August, the abrupt drop in production of iron and steel, automobiles, and lumber was an outstanding feature of the general recession. The scheduled rate of steel-mill operations, for example, was reduced by the end of November to about 30 per cent of ingot capacity, marking one of the most severe contractions in the history of the iron and steel industry. Declines in these industries are naturally associated with decreased activity in many other lines. Production of electric power and bituminous coal dropped contra-seasonally toward the end of the year. Woolen mills, shoe factories, meat packing houses and producing plants for various other "consumer goods" were operating at low levels during the last quarter, while petroleum production and tobacco products held a good record throughout 1937 with only about the usual seasonal decreases. The volume of building operations continued to be unsatisfactory.

INDUSTRIAL AND MERCHANDISE DISTRIBUTION

The trend of production early in the year was accompanied by a rising volume of freight toward the end of the first quarter which continued at an accelerated rate of increase through April. During the first five months the increase in car loadings over the corresponding period of 1936 amounted to about 14 per cent, but the gain in June over the same month of the preceding year was only about seven per cent. This slowing up of the rise in freight volume, with allowance for seasonal variations, was generally attributed at that time to industrial disputes, particularly in the steel and automobile industries, and to strikes which tended to curtail miscellaneous loadings comprised of manufactured products. The movement of goods in the third quarter was not up to expectations, and by October the forward buying during previous months, the curtailed output in numerous industrial lines, and the general business recession had contributed to a contra-seasonal decline in car loadings, bringing the adjusted index for miscellaneous freight to the lowest point since midsummer 1936. Ore loadings also declined substantially. Loadings of grain and grain products, as a result of unusually large agricultural production in some lines, showed gains. Though the volume of freight carried by the railroads during the first 11 months was seven per cent above the total for the same months of 1936, figured on comparable bases, the rate of decline in the third and fourth quarters was in marked contrast to 1936.

Wholesale trade showed a downward trend in the third and fourth quarters of the year following a gain in dollar sales during the first six months of about 19 per cent over the corresponding period in the previous year. The major portion of the 1937 gain in the value of total exports and general imports, 13.6 and 13.2 per cent respectively, during the first 11 months, was accounted for by increased foreign trade in manufactured articles. Preliminary estimates of domestic retail sales indicate for the year a gain in dollar volume of six to eight per cent over the high record for 1936.

EMPLOYMENT AND PURCHASING POWER

Total factory employment for the year, exclusive of December, was approximately 10 per cent above the

total for the same 11 months in 1936, while factory payrolls (unadjusted) increased 23 per cent, indicating for the current year a gain in total purchasing power acquired by wage earners and a higher average rate of pay per worker. Both employment and payrolls experienced a sharp contraction in November following a downward trend which began in mid-September. The September–October declines in the iron and steel industry and in non-durable goods such as textile fabrics were contra-seasonal and in direct contrast with the more-than-seasonal expansion of last year. Toward the close of the year, employment reductions in automobile factories further contributed to the large total of the unemployed. To some extent, of course, the seasonal increase in retail trade and related services tended to relieve the situation.

Preliminary estimates indicate that the total national income paid out in 1937 was possibly 10 per cent greater than the 1936 total with about the same margin of increase in the income produced. The estimated total of agricultural income, including benefit payments, exceeded the 1936 total by $635,000,000.

PRICES, PROFITS AND FINANCE

The upward price movement, inherited from the preceding year, continued generally throughout the first three months of 1937 and, despite evidences of considerable havoc in the price structure during the year, available data covering the first 11 months show that average wholesale and retail prices (Fairchild Index) were above the average for the same period in 1936. From the peak in April, the prices of agricultural products began a decline that continued with slight interruptions throughout the year. Raw material prices also dropped in the second quarter and continued to fall. The general average of wholesale prices held up until September, then sharply declined with an abruptness not exceeded since the summer of 1930. All economic classes of goods and the major commodity groups were included in this decline. Prices of finished products declined three points between September and mid-November. Moody's daily index of spot commodity prices toward the end of November reached the lowest level since the summer of 1934. Retail food prices decreased slightly at the beginning of the fourth quarter. Prior to the slight decline in August retail prices of department store articles had advanced for 14 consecutive months. The cost of living average in 1937 was about five per cent higher than in 1936.

Security prices broke severely in October, and for the most part continued a weakened course. In the first quarter of the year, profits of industrial corporations were almost 50 per cent above the same period in 1936. Higher labor costs, together with decreased output in the last quarter, will tend to decrease profits but preliminary estimates indicate that corporate income fell considerably below 1936 levels. The year-end finds credit available at low interest rates.

THE OUTLOOK

The erratic course of 1937 cannot be satisfactorily explained on the basis of statistical information. Although available data constitute an interesting record, their value as the foundation for conclusions concerning the future is peculiarly lessened at a time when first steps toward definite improvement from existing conditions appear to depend largely upon the willingness and ability of warring human factions to harmonize the direction of their efforts toward recovery. However, the history of past periods of depression and prosperity in the United States seems to bear out the conclusion that a business recession is a natural reaction to rapidly increasing production after an upswing in business activity following crisis years. The present situation would seem to afford little hope for substantial improvement before the fall months of 1938.

THE UNITED STATES TARIFF COMMISSION

By Raymond B. Stevens

Chairman of the United States Tariff Commission

MEMBERSHIP AND ORGANIZATION

Owing to death and resignations, there were several important changes in 1937 in the personnel of the Tariff Commission. The membership of that body at the close of the year was as follows with the date of the expiration of term of office:

Raymond B. Stevens, Chairman, New Hampshire, June 16, 1943.
Henry F. Grady, Vice Chairman, California, June 16, 1941.
Edgar B. Brossard, Utah, June 16, 1938.
Oscar B. Ryder, Virginia, June 16, 1939.
E. Dana Durand, Minnesota, June 16, 1940.
A. Manuel Fox, New York, June 16, 1942.

Robert Lincoln O'Brien, who had served as chairman of the Commission since 1930, resigned on June 30, 1937. Thomas Walker Page, who had served the Commission as vice chairman since 1930, died Jan. 13, 1937. Mr. Grady of California was appointed by the President in April to fill the vacancy caused by Mr. Page's death.

The Commission has approximately 300 employees. The appropriation for expenses of the Commission for the fiscal year ended June 30, 1937, was $945,000, plus a printing appropriation of $15,000. The total expenses of the Commission during this period were $938,000.

WOOD PULP AND PULPWOOD

A report on wood pulp and pulpwood was completed in response to Senate Resolutions 365 of the 72d Congress and 200 of the 74th Congress.

The United States production of wood pulp is one-fifth of the world total and greater than that of any other country. Canada, Sweden, Germany, Finland, and Norway, in the order named, are the other most important producing countries. The paper industry of the United States uses, in addition to the bulk of the domestic pulp output, large amounts of foreign wood pulp; in fact, the United States is the largest market for the wood pulp entering international trade. In 1936 its imports amounted to about 2,250,000 tons. Exports of wood pulp, chiefly from the Pacific coast mills, have increased greatly in recent years but are still small in relation to domestic production or imports; in 1935 and 1936 they amounted to less than 4 per cent of production. Most of the exports are of sulphite pulp. Japan, taking the bulk of the exports from the West Coast, has become by far the most important export market.

Notwithstanding the large domestic production and imports of wood pulp for use in the domestic paper industry, the United States is a far larger consumer than producer of paper. In 1936 imports of newsprint, the only kind of paper imported in great volume, amounted to about 2,750,000 tons. If imports in the form of pulp and in the further advanced form of newsprint paper are taken together, almost as much wood pulp has been imported in recent years as has been produced in this country. In addition to the imports of pulp and paper, imported pulpwood has supplied the raw material for 10 to 15 per cent of the domestic production of wood pulp. The large importation is explained by the depletion of the stands of spruce and balsam fir in the Northeastern and North Central regions of the country in areas close to established mills. However, by reason of the large expansion of pulp production in the South and on the Pacific Coast, the dependence of the United States on imports of paper and materials has not changed materially in the last 10 years.

An important feature of the situation is the regional distribution of the domestic pulp industry in relation to paper consumption. The areas of large paper consumption are in the northeastern quarter of the coun-

try. The Northeastern and North Central States produce much less of all three products—pulpwood, wood pulp, and paper—than they consume. The upward trend of United States pulpwood and pulp production in the last decade is accounted for by increases in the Southern and Pacific coast regions, which produce pulpwood and wood pulp greatly in excess of their paper requirements. Pulpwood and pulp production in the Northeastern and North Central regions has in the past decade shown a downward trend: these two areas take the bulk of the imports of pulpwood, almost entirely from eastern Canada; of wood pulp, chiefly from Europe but also in large amounts from Canada; and of newsprint paper, chiefly from Canada. In addition, they draw large quantities of kraft wrapping paper and container board from the South and considerable pulp from the Pacific coast.

The Commission's investigation discloses that costs of producing most kinds of wood pulp are generally considerably lower in the Pacific Northwest than in the Northeastern or Lake States because of the much lower costs of pulpwood there. In the case of ground wood pulp, however, costs averaged little lower on the Pacific coast than in the Northeastern section of the country. In the South the costs of producing sulphate pulp are even lower than in the Pacific coast region, chiefly by reason of the extremely low prices of yellow pine pulpwood.

So far Southern pine has been used in large quantities only in making kraft pulp for the manufacture of brown wrapping papers, container board, and similar products. The rapid expansion of the Southern kraft industry has in part, though not entirely, taken care of the great increase in the demand for these products in the United States. With the expansion of the pulp industry now taking place in the South, the independence of the Northeastern and Lake and Central States on imports of kraft pulp may be lessened, even though low consumption continues to increase.

UNITED STATES-PHILIPPINE TRADE

A report on "United States–Philippine Trade Relations, with Special Reference to the Philippine Independence Act and Other Recent Legislation," was issued by the Commission in February, 1937. It was prepared primarily to supply basic data on the trade relations between the United States and the Islands, and to appraise the economic effects of carrying out the provisions of the Independence Act, also known as the Tydings-McDuffie Act. The report does not undertake to analyze problems arising out of political and military considerations which likewise must be reckoned with in appraising fully the effects and implications of Philippine independence.

Since the American occupation of the Philippines, the trade between the United States and the Islands has increased rapidly. The very large share of the United States in both the exports and the imports of the Philippine Islands has been chiefly due to the free entry of goods from each into the other, as contrasted with the dutiable status of much of the goods imported from foreign countries.

The Philippine Independence Act, though not likely to change the economic life of the United States, will undoubtedly play a major part in altering the economy of the Philippines by changing the duty-free status of trade between the two. In fact, it has already begun to do so, but to a less extent than other recent legislation—to be specific, the Jones-Costigan Act, the Revenue Acts of 1934, 1935, and 1936, and the Cordage Act.

EQUAL TARIFF TREATMENT IN FOREIGN COUNTRIES

The report on "Extent of Equal Tariff Treatment" analyzes the tariff policies of 42 countries showing whether they have single-column or multiple-column tariffs, whether they make trade agreements, and whether the concessions made in such agreements are extended freely to all countries, to those countries with which they have most-favored-nation treaties, or are given exclusively to one country.

The report brings out the fact that tariff duties on imports remain the chief barrier to the world's trade. The other methods of controlling trade—quota systems, licensing systems, exchange controls, clearing and compensation agreements—are all in addition to tariffs and are not substituted for them. It shows that countries which have half of the import trade of the world make little or no use of quota systems, exchange controls, or any other of the newer forms of trade restrictions; further, that many of the countries which employ other methods do not apply them to all imports, and that the restrictive effects of some quotas, exchange controls, or other restrictions are slight; moreover, to some extent countries using these newer methods of restriction endeavor to avoid discrimination among the countries supplying imports.

EXCISE TAXES

In May 1937, the Commission published a report entitled, "Imports, Exports, Domestic Production, and Prices—Petroleum, Coke, Lumber, Copper, Certain Oils and Fats—Together with Excise Taxes Collected Thereon." This report was prepared especially for the assistance of the Committee on Ways and Means of the House of Representatives and the Committee on Finance of the Senate.

The excise taxes covered by the report are of two kinds, (1) those levied on the importation but not on the domestic production of commodities (import excise taxes) and (2) those levied on the domestic processing of materials, none, or practically none, of which is produced in the continental United States (processing taxes). Excise taxes of both these types, provided for by the Revenue Acts of 1932, 1934, and 1936, are in their economic effects practically identical with tariff duties.

The report is largely statistical; it consists of a short general introduction and a separate section devoted to each of the five products or groups of products named in the title. Each section contains a brief introductory statement, summary tables showing on an annual basis domestic production, imports, exports, prices, and revenues collected from excise taxes; also detailed tables showing monthly imports, exports, and computed revenue from excise taxes are presented.

NETS AND NETTING AND OTHER FISHING GEAR

The Commission has completed a report on an investigation concerning nets and netting and other fishing gear, instituted in response to Senate Resolution 165, 73d Congress, second session. The report is confined principally to nets and netting of cotton, linen, and manila used in commercial fishing; in other items of fishing gear, as pointed out, the volume of import trade is small. The impact of competition is chiefly between domestic and imported cotton fish netting and is confined largely to the Pacific Coast area. Cotton fish netting, by far the most important of the three, is dutiable at 40 per cent *ad valorem;* that made of linen is dutiable at 45 per cent *ad valorem,* while manila netting, of which there is no regular domestic production, is admitted free of duty.

Since 1932 Japan has been much the most important source of imports and the Japanese imports have been sold chiefly on the Pacific Coast. Available production and distribution statistics do not indicate that the increased imports have materially reduced domestic sales on the Pacific coast; the impact of competition is chiefly reflected in the lower prices at which domestic nettings were sold in that area. Imports in part represented sales which at the time of the depressed fish market would not have been made at higher prices, and thus the displacement of domestic netting was not equal to total imports. In areas other than the Pacific Coast, the competition between domestic and imported netting has not attained the extent of that on the Pacific Coast.

SALMON AND OTHER FISH

In compliance wih Senate Resolution 165, dated Feb. 1, 1934, the

Commission in June, 1937, reported to the Senate on the importation into the United States of salmon and other fish and the effect of such importations on the fishing industry of the United States. The investigation showed that the United States is on a net import basis for fish. During the six-year period 1931–36, annual imports averaged 263,000,000 pounds valued at $19,000,000. Annual exports in the same period were only 92,000,000 pounds, valued at $9,000,000. The domestic catch of fish ranges from 2,500,000,000 to 3,000,000,000 pounds annually. The information obtained indicated clearly that imports are for the most part supplemental to domestic production. The data gathered showed also that the impact of imports varies widely with the species or groups of species and with the form in which each is marketed, there being relatively little direct competition between unlike forms, such as fresh and canned, or between unlike species, such as mackerel and cod.

WOOL PRICES

The Tariff Commission completed during the year a report entitled "Wools—Comparative Prices and Price Differentials of Foreign and Domestic Wools," a study of which has been in progress by the Commission for some time. The purpose of the study was to determine the effect of the basic duty on raw wool in raising domestic prices of American wools. The report points out that numerous factors influence wool prices and that the separate effects of these factors cannot be accurately measured. From available data, however, it is estimated that in the 12-year period 1924–35 the wool duty raised the Boston prices of the four main grades of American wool combined approximately 20 cents per pound of clean content above the prices of comparable Colonial wools in London. The duty on combing and clothing wools from 1924 to June, 1930, was 31 cents per pound of clean content; thereafter 34 cents per pound of clean content.

FLAT GLASS AND RELATED GLASS PRODUCTS

The survey on "Flat Glass and Related Glass Products" covers, under 10 chapters, the various products of the flat glass industry. The report consists largely of factual data concerning manufacturing, trade, and economic conditions in this industry, and treats only incidentally of glass technology. Use is made of much of the information obtained by the Commission in its several cost investigations both in the United States and abroad. The increasing importance of flat glass products in modern life, and the revolutionary advances in manufacturing methods, have led to significant changes in competitive conditions with respect to these products in the last two decades.

The flat glass industry embraces all glass in the form of plates, sheets, or slabs—all formed by rolling, drawing, or pressing molten glass or by flattening and smoothing cylinders of blown glass. The major products of the industry are as follows: (a) Cylinder, crown, and sheet glass; (b) Plate glass; (c) Rolled and figured glass; (d) Wire glass; and (e) Structural glass and glass masonry.

In addition to these major products, there are numerous related glass products, in the production of which further manufacturing operations are necessary. These include safety glass (by far the most important), mirrors (silvered glass), stained and painted glass windows, and products formed from the ordinary types of flat glass by further auxiliary processes, such as bending, beveling, coloring, engraving, etching, ornamenting, and decorating.

The international trade in flat glass suffered a severe decline after 1929, exports from eight countries, which are the principal sources of imports, falling from approximately 1,347,000,000 pounds in that year to a low of 697,000,000 pounds in 1932. By 1935 they had increased to about 820,000,000 pounds. Belgium has always been by far the principal supplier of flat glass to world markets, although in 1935 her position was not so strong as in 1929 and earlier years.

Significant changes since 1929 have been the decline in exports from France, the rise of the Soviet Union and Japan as producing nations, and the shift of these countries and the United States from an import to an export basis.

SODIUM SULPHATE

In its survey on sodium sulphate (salt cake), the Commission sets forth in detail the economic and technical changes that have occurred in the production and consumption of this industrial chemical during the past decade. Sodium sulphate is marketed in three forms: (1) Crude sodium sulphate or salt cake, used chiefly as a raw material in the manufacture of sulphate wood pulp, from which kraft paper is made, in the production of glass, especially plate glass, and as a raw material for other industrial chemicals; (2) Anhydrous sodium sulphate, a water-free, refined form used principally in the dye and textile industrial; and (3) Glauber salt, a hydrated, refined form used for much the same purposes as the anhydrous product. Because of its greater industrial importance and tariff significance, crude sodium sulphate is considered in more detail in this report than are the refined forms.

The report shows that the apparent consumption of salt cake in the United States increased from 177,000 tons in 1925 to 307,000 tons in 1935 largely because of the expanding use in the sulphate pulp industry. By reason of the increased demand and the inability of domestic producers to meet it, imports, largely from Germany, increased from 11,000 tons in 1927 to 110,000 tons in 1935. Virtually all of the imported salt cake is consumed by the sulphate pulp industry, particularly in the Southern and Pacific States. These areas are distant from the centers of production of chemical salt cake in the Middle Atlantic, Northeastern, and North Central States; and the Southern consuming area, especially, is far from natural deposits in the West. Some crude sodium sulphate is imported from Canada into the Lake States for use in the sulphate pulp industry in that area.

DRESSED OR DYED FURS

In response to Senate Resolution 250, Seventy-fourth Congress, passed April 24, 1936, the Commission instituted a cost of production investigation of dressed or dyed Persian lamb, krimmer, karakul, Russian pony, squirrel, mole, and certain other furs, including plates, mats, linings, etc.,* made of such furs.

The report indicates that little competition has been offered to the domestic fur dressing and dyeing industry, since imports of dressed or dyed furs have always been small in relation to the quantity or value of furs dressed or dyed in the United States. Imports of undressed furs of all kinds amounted to 128,000,000 pelts valued at $108,000,000 in 1929, declined to 90,000,000 pelts valued at $25,000,000 in 1932, and then increased to 166,000,000 pelts valued at $75,000,000 in 1936.

The Commission found that, owing to the nature of the economy of the Soviet Union, principal source of the imports of the furs covered by the Senate Resolution, there is a question whether it would be practicable to ascertain costs of production in that country. Imports of the furs named in the resolution are in large part shipped from the Soviet Union to the United States on consignment. Although section 336 permits the use of invoice values as evidence of foreign costs it is extremely doubtful whether such values are significant for dressed or dyed furs.

UNFAIR PRACTICES IN IMPORT TRADE

During the year the Commission handled a number of inquiries and complaints under section 337 concerning unfair trade practices in import trade. The original correspondence in the greater number of these complaints indicated that there was no violation of that section. Several cases warranted preliminary inquiry,

* Two or more dressed or dyed fur skins sewed together are known in the trade as plates, mats, linings, etc.

but in none of these was the institution of a formal investigation found necessary. Some of the complaints were taken up informally with importers, who thereupon agreed to desist from the practices complained of, thus obviating the need for formal investigation; in other cases that were taken up with importers the facts disclosed indicated no basis for proceeding under section 337.

Patent infringement was the principal ground of complaint, and in practically all cases the patents had not been adjudicated either as to validity or scope. In such cases the Commission declined to order formal investigations under section 337, and in two cases principally involving patents (discussed more fully hereafter) dismissed investigations which had been previously ordered.

TRADE AGREEMENTS PROGRAM

The period during which the President is authorized to negotiate foreign trade under the Trade Agreements Act was extended to June 12, 1940 by a joint resolution of the Congress approved March 1, 1937. The trade agreement with El Salvador was signed Feb. 19, 1937, and became effective May 31; the Costa Rican agreement was signed Nov. 28, 1936, but was not finally effective until Aug. 2, 1937. Since the Congress in June, 1934 authorized the negotiation of reciprocal trade agreements, 20 agreements have been undertaken; of these, 16 have been concluded and are in operation. Notices of intention to negotiate agreements with Ecuador and Czechoslovakia, and preliminary announcements with respect to Venezuela and Turkey were issued by the Department of State during the current yer.

Although formal action has been taken during the year only on the trade agreements mentioned above, basic trade data are being assembled and analyzed by the Commission's staff regarding matters pertaining to other prospective agreements.

The Tariff Commission has been represented on all interdepartmental committees concerned with the reciprocal trade agreements program and has continued to furnish these committees, especially the committee for each country with which a trade agreement is being negotiated, with specialized studies dealing with all phases of the trade between the United States and the respective countries. These studies, the joint work of the commodity and economic experts of the Commission's staff, furnish information not only for each article which finally appears in the trade agreement with a particular country, but for all other articles which might be potential subjects of concessions to that country. The committees and subcommittees thus have at hand a sufficient body of data to enable them to appraise the probable economic effects of each degree of concession that might be made on any commodity.

As in past years since the passage of the Trade Agreements Act, the Tariff Commission has taken a very considerable part in the work of the Committee for Reciprocity Information. The procedure in negotiating trade agreements and the regulations of the Committee for Reciprocity Information were revised during the year to provide greater opportunity for the presentation of views to the Committee on any phase of the whole trade agreements program, and to allow, after preliminary announcement by the Department of State to the effect that trade agreements are contemplated with particular countries, suggestions to be made to the Committee as to what products shall be considered in the proposed negotiations.

The new procedure followed in announcing trade agreements is such that interested parties are given notice as to possible concessions which may be granted by our government. Detailed statistics with respect to import and export trade of the United States with the country concerned accompany preliminary announcements, and formal notice of the intention to negotiate includes the precise list of products on which the United States will consider granting concessions to the particular coun-

try concerned. The inclusion of an article in the announced list does not necessarily mean, however, that it will be the subject of a concession under the terms of the agreement. On those items which finally are included in the agreement the previously existing duties may be changed or bound against increase and the continued free entry of articles may be bound.

WORKS PROGRESS ADMINISTRATION PROJECTS

In December, 1935 the Tariff Commission, with the assistance of the Works Progress Administration, started a project in Richmond, Va., the operations of which in the first ten months are described in the Commission's twentieth annual report. The force employed on the project was selected from the Works Progress Administration relief rolls of Richmond, working under the supervision of members of the Tariff Commission's staff detailed from Washington. Asisgnments completed to Oct. 31, 1937, include: imports for consumption by countries for 1929, for 1931–35, and for 1936; computed duties and equivalent *ad valorem* rates on imports into the United States from principal countries, 1935; and statistical classification of imports into the United States by tariff paragraphs and tariff schedules, effective Jan. 1, 1937.

ADMINISTRATION OF THE TARIFF LAWS

By William R. Johnson

Chief Counsel, Bureau of Customs, Treasury Department

CUSTOMS COLLECTIONS

The total customs collections for the fiscal year 1937 amounted to $488,342,746, being 26 per cent greater than during the preceding years, and almost double that of 1933, when the duties collected were at the lowest level since the World War. The increase in the collections is reflected in the tariff schedules generally, except in the case of sugar and sugar products (schedule 5), the importation of which is restricted by import quotas. The table next page shows the value of dutiable imports and duties collected for the fiscal years 1936 and 1937.

VOLUME OF BUSINESS

Entries of Merchandise.—The total number of entries of merchandise increased 17 per cent from 2,712,954 in the fiscal year 1936 to 3,170,041 in the fiscal year 1937. This marked the fourth successive year of increased business as measured by the number of entries. The following table shows the entries of merchandise for the fiscal years 1936 and 1937:

	1936	1937	Per Cent of Increase
Consumption entries	507,431	590,110	16.3
Warehouse and rewarehouse entries	68,929	75,935	10.2
Warehouse withdrawals	379,124	382,392	0.9
Mail entries	527,261	564,546	7.1
Baggage entries	480,048	690,353	43.8
Informal entries	206,436	244,281	18.3
All other	543,725	622,424	14.5
Total	2,712,954	3,170,041	16.8

Marine Transactions.—A marked increase in foreign traffic was shown during the past fiscal year, the number of vessels entering the ports of the United States direct from foreign countries being 32,672, or 10.4 per

VALUE OF DUTIABLE IMPORTS AND DUTIES COLLECTED, FISCAL YEARS 1936 AND 1937 CLASSIFIED BY SCHEDULES OF TARIFF ACT OF 1930 [1]

Schedule No.	Value of Dutiable Imports		Duty Collections	
	1936	1937	1936	1937
1	$67,872,673	$86,075,495	$26,650,337	$30,405,095
2	25,346,221	33,757,723	12,663,963	16,402,897
3	81,325,393	110,117,459	25,835,060	35,330,658
4	15,785,564	18,493,002	2,355,423	2,973,572
5	121,630,897	120,834,257	45,870,623	41,320,635
6	28,068,674	32,925,474	23,395,842	27,077,794
7	205,015,141	332,490,776	81,505,769	117,297,470
8	53,286,636	78,374,869	39,074,871	46,131,114
9	30,460,290	42,618,192	11,993,949	16,771,843
10	65,605,821	76,735,299	15,726,579	19,044,295
11	47,731,803	87,429,011	37,693,937	57,270,432
12	6,018,413	8,185,607	3,520,476	4,466,436
13	3,187,754	7,941,656	1,148,961	3,204,935
14	12,432,386	14,360,684	2,947,579	3,208,770
15	125,379,325	161,178,988	38,858,009	47,375,054
——[2]	32,619,988	40,451,857	10,959,493	11,414,089
Total.....	$921,766,979	$1,251,970,349	$380,500,871	$479,695,089

[1] This table covers duty collections only ond does not include miscellaneous collections of fines and forfeitures, liquidated damages, sale of seized property, etc., all of which are included in the figure for the total customs collections under receipts.
[2] Supplemental duties, including duties collected under the Revenue Act of 1932.

cent over the total for the previous year.

Airplane Traffic.—The rapid growth in airplane passenger traffic between the United States and foreign countries is shown by the fact that 37,304 passengers arrived from abroad by air during the year 1937, an increase of 10,913 passengers, or 37.6 per cent over the number for the preceding year. Of that number, 22,861, more than three-fifths, were passengers who arrived in the Florida district, while 8,501 arrived in districts adjacent to the Canadian border. Particularly noteworthy were the gains in arrivals by air in the Washington, Dakota, and New York districts. The only section of the country to show a decrease in airplane-passenger traffic for 1937 was that along the Mexican border. Fewer passengers arrived by plane in that section than during any of the seven preceding years. Airplanes to the number of 5,455, carrying passengers, arrived from abroad during the fiscal year 1937 as compared with 4,588 for the preceding year. During 1937 there was an average of almost seven passengers per plane as compared with less than three passengers per plane for the year 1930.

Drawback Transactions.—The number of drawback entries increased from 19,429 in 1936 to 22,152 in 1937, or 14 per cent. Drawback payments increased from $10,022,556 in 1936 to $10,773,501 in 1937.

CUSTOMS SEIZURES

The total number of seizures for violations of the customs laws made in 1937 was 10,624, a decrease of 4,024 from the preceding year. As during the two previous years, this decrease was the result of the further decline in the number of lottery and liquor seizures effected by customs officers. The lottery seizures numbered only 175 in 1937, as compared with 3,953 in 1936. Practically all lottery seizures are now handled by the Post Office authorities. Liquor seizures made in 1937 totaled 2,430 as compared with 3,252 in 1936. Of the liquor seizures made in 1937, 1,455 occurred in the four customs districts

comprising the Mexican border area. The decline in value of seizures from $1,590,968 in 1936 to $1,260,618 in 1937 was due to the small quantity of dutiable liquor and alcohol seized during the past fiscal year.

Merchandise seizures during the fiscal year 1937 were substantially larger in number and value than in 1936, the number of seizures being 10 per cent greater and their value more than twice that for 1936. The two largest seizures were made at New York, one of diamonds valued at $286,346 and the other of quicksilver valued at $238,500. The diamond seizure was the first large commercial shipment seized since the passage of the Tariff Act of 1930, when the rate of duty was cut in half. Seizures of watch movements aggregated only 2,503 valued at $14,417 during 1937 as compared with 9,955 valued at $74,696 during 1936. There was a large increase in the seizures of furs, one seizure alone at New York being valued at $107,795.

CLAIMS AND PENALTIES

Claims against importers in connection with frauds and irregularities discovered after the goods had gone into consumption amounted to $10,971,897 during 1937, as compared with $5,035,269 in similar cases discovered during the previous year. During the fiscal year 1937 there were 367 apprehensions for violation of the narcotic laws reported. Penalties aggregating $81,418 were assessed against the masters of 32 vessels on which narcotics were found concealed during the fiscal year 1937.

The total collections during 1937, as a result of violations of the customs laws, aggregated $883,935, as compared with $1,764,765 for 1936.

SMUGGLING

Mention has been heretofore made of the large seizure of diamonds at New York. This seizure consisted of 3,396 carats of diamonds found in the baggage of a third-class passenger at New York and resulted in the breaking up of a large smuggling ring. The seizure resulted in the indictment of 55 persons, including both dealers and carriers, many of whom have already been convicted and sentenced.

Two cases of major importance in narcotics smuggling were successfully closed during the fiscal year 1937. One of these resulted in the seizure of 599 cans containing 3,744 ounces of smoking opium. The principal in this case was convicted, sentenced to 10 years in prison and fined $5,000. Four members of the crew on the vessel on which the opium was found were also sentenced to terms ranging from six months to four years and two harbor junk-boat operators were each sentenced to six and one-half years in prison.

CUSTOMS WAIVERS IN EMERGENCY RELIEF

An unusual phase in the administration of customs laws is the emergency treatment of imported merchandise under Section 318 of the Tariff Act of 1930. That section is the only authority in the tariff laws for complete administrative waiver of duties imposed by an act of Congress. Whenever the President by proclamation declares an emergency to exist by reason of a state of war, or otherwise, he may authorize the Secretary of the Treasury to extend, during the continuance of such emergency, the time prescribed in the Tariff Act of 1930 for the performance of any act, and may authorize the Secretary of the Treasury to permit the importation free of duty of food, clothing, and medical, surgical, and other supplies for use in emergency relief work. The Tariff Act of 1922 is the only statute which contained a similar provision, but action thereunder was limited to the extension of the time prescribed in the tariff law for the performance of any act.

The President, under the authority conferred by the Act of 1930, has from time to time declared emergencies to exist by reason of economic conditions in the United States, and has authorized the Secretary of the Treasury to extend the time during which imported goods may remain in bonded warehouses without payment of duty, the time within which

merchandise must be exported to be entitled to drawback, and the time within which the production of proof of the use of carpet wool in bond may be furnished to secure exemption from duty.

An emergency, due to flood conditions, was proclaimed in February, 1937, and the free entry of food, clothing, medical, surgical, and other supplies was authorized when imported for use in emergency relief work in connection with the disastrous Ohio river flood.

FOREIGN TRADE ZONES

The first zone to be established under the Foreign Trade Zones Act of June 18, 1934, was at Stapleton, Staten Island, New York, where Foreign Trade Zone No. 1 opened for business Feb. 1, 1937. A grant has been made for the establishment of Foreign Trade Zone No. 2 at Mobile, Ala., and its construction is now in progress. An application for the establishment of a zone at San Francisco has been denied without prejudice to the consideration of an amended application if one shall be submitted.

TRADE AGREEMENTS ACT

Under the Trade Agreements Act of 1934 reciprocal trade agreements have been negotiated with 16 foreign countries as follows:

Belgium	France
Brazil	Guatemala
Canada	Haiti
Colombia	Honduras
Costa Rica	The Netherlands
Cuba	Nicaragua
El Salvador	Sweden
Finland	Switzerland

Pursuant to these agreements, reductions in rates of duty on approximately 275 classes of commodities have been proclaimed, the benefits of which, with the exception of the rates fixed under the Cuban Trade Agreement, are extended to the products of all countries unless suspended by the President with respect to products of particular countries which discriminate against American commerce, or whose acts or policies are believed by the President to tend to defeat the purposes of the Trade Agreements Act. At the present time the President has suspended the application of trade agreement rates to the products of Germany and the Commonwealth of Australia. Since the reciprocal agreement with Cuba is exclusive, the rates of duty fixed under that agreement are not applicable to the products of other countries.

QUOTA CONTROL

Import and tariff quotas, established under the terms of the Canadian Trade Agreement, the Philippine Independence Act, the Philippine Cordage Act of June 14, 1935, and Section 811 of the Revenue Act of 1936, limit the total quantity of certain commodities which may be imported within quota periods or fix limited quantities of other commodities which may be imported at reduced rates of duty. The control of these quotas is administered by the Bureau of Customs, periodic information being provided through the press regarding the percentage of fulfillment of each import quota. When the quota on a commodity is nearing fulfillment, tabulations showing total importations as of a given date are released at frequent intervals for the information of importers and other interested persons.

REORGANIZATION OF APPRAISING FORCES

A new system of administrative control of the appraising forces in certain customs collection districts has been established, centralizing such control in the Commissioner of Customs. Prior to this change, appraising officers in each of the districts affected were under the administrative control of the collectors of customs of such districts. On Sept. 1, 1937, an order of the Secretary of the Treasury went into effect whereby the appraisers of merchandise in certain customs collection districts, together with such subordinate employees performing services in connection with the examination or appraisement of merchandise, were separated from the administrative control of collectors

and placed under the direct administrative control of the Commissioner of Customs. The order also effected the separation of the Customs Information Exchange from the Customs Agency Service and placed it under the administrative control of the Commissioner. Thereafter, an Acting Deputy Commissioner was designated in the Bureau of Customs in Washington, and placed in charge of the appraisement of merchandise and the Customs Information Exchange.

CUSTOMS SCHOOL OF INSTRUCTION

The school of instruction for the Customs Service, which was established July 5, 1935, now has a total enrollment of 8,600. The school has adopted the policy of fostering in-service training, *i.e.*, the instructions of officers and employees in the service. The instruction is carried on entirely by correspondence and thus far has proven most helpful to those taking the course.

Although the course is limited to officers and employees in the Customs Service and to the personnel of co-operative branches in the Government Service, it has been recently decided, in view of the close relationship existing between our Government and the Philippine Government, to grant the request of that Government to make their officers and employees eligible for enrollment. In addition, customs officers from several foreign countries, including China and Turkey, have made a detailed study of customs laws and procedure under the guidance and with the assistance of the School of Instruction.

RAILROADS

By John J. Pelley

President, Association of American Railroads

GENERAL CONDITIONS

Railways of the United States entered the year 1937 with somewhat conflicting prospects. Traffic trends were highly encouraging. Because of lowered rate levels, revenue prospects were not so encouraging. Operating costs were still on the increase and foreshadowed trouble on the income horizon.

During the first six months of the year, the volume of both freight and passenger traffic moved upward. Operating revenues also increased, but at a lesser rate than the increase in traffic volumes. This was due to (1) loss of some $10,000,000 monthly through the expiration on Dec. 31, 1936 of the Emergency Freight Charges authorized in *Ex Parte 115*, and (2) reduced passenger fare maxima effective June 1, 1936.

Because of increased operating costs and taxes, the proportion of increased revenues carried through to net railway operating income in the first six months of the year was negligible in every month except March.

All favorable trends, except that in the volume of passenger traffic, disappeared in the second half of the year. Freight traffic gradually eased off in July, August, and September, and, from October on, fell considerably below the level of the same months in 1936. Total operating revenues closely followed the pattern set by freight traffic, while the small gains of the first six months in net railway operating income and in net income after fixed charges, were more than wiped out for the year as a whole, compared with 1936. As the year drew to a close, the railroads faced a new crisis brought about by their inability to bring expenses into line with reduced traffic and revenues.

Thus the early traffic gains of 1937 gave way under the impact of reduced industrial production and lowered business activity, while the early gains in net revenues were gradually overtaken, and finally completely overwhelmed, by the rising tide of operating costs.

For the year 1937 as a whole, the

volume of traffic and revenues increased slightly over 1936. Net railway operating income declined by about 11 per cent, while net income after interest and other fixed charges was cut in half.

Discouraging as were the final operating results, the year was not without compensatory elements. In the first place, during the closing months there appeared evidence of an awakened public interest in and understanding of the railroad problem, an interest founded on recognition of the economic significance of the railroads, not only as transportation agencies, but also as large employers of men and women and as large purchasers of the nation's goods. In the second place, there was tangible evidence of abatement, or at least a slowing down, of motor vehicle and other competition for railroad traffic.

RAILROADS AND THE DEPRESSION

So far as net earnings are concerned, the railroads have progressed little from depression lows. The railroad plant represents an investment in excess of $25,000,000,000. Against this investment, there is outstanding in the hands of the public about $11,333,000,000 in funded debt and slightly over $7,000,000,000 in equity securities. Interest charges on funded and unfunded debt require approximately $500,000,000 per year, an amount equivalent to about two per cent on the property investment. Any money left over after payment of these charges is available for additions and betterments to property, for reserves, and for dividends to stockholders.

Many companies have fallen far short of earning their fixed charges during the period of economic depression, and reserves have been drawn upon, to the end of almost empty treasuries. The reason for this is indicated by the following comparison of net railway operating income, and net income after fixed charges, before the economic depression set in, during the depression, and during the more recent period of partial recovery.

New Railway Operating Income
(annual average)

1924–1930	$1,095,633,000
1931–1934	477,218,000
1935–1937	585,722,000
1937	590,000,000

Net Income after Fixed Charges
(annual average)

	$706,970,000
Def.	6,798,000
	85,723,000
	85,000,000

In the depression years 1931 through 1934, net railway operating income was only 40.8 per cent as great as in the years 1924 through 1930. During the semi-recovery period, 1935 through 1937, the percentage increased only to 53.5 per cent, and in the single year 1937 to no more than 53.9 per cent. Similarly, net income after fixed charges, which completely disappeared in the depression years 1931 through 1934, averaged in the semi-recovery years 1935 through 1937 merely 12.1 per cent as great as in the years 1924 through 1930. The percentage declined to 12 per cent in 1937 alone.

In considering these figures, it should be remembered that even during the period from 1924 through 1930, the net railway operating income never equalled the "fair return" on property investment contemplated by the Transportation Act of 1920. This return was set by the Interstate Commerce Commission at 5¾ per cent. Obviously, there has been no great measure of recovery for the railroads, and their relative position today is very slightly better than in the depth of the depression.

THE RAILROAD DILEMMA

The business recession of the autumn of 1937 brought sharply into focus the recurrent dilemma which besets the railroad industry. Railroads cannot close down in whole or in part, as other industries do, simply because business is bad. They are public utilities and, as such, must continue to render service to the public in good times or bad, whether traffic is heavy or light. Necessity of continuous operation, combined with stringent public regulation, makes it difficult to overcome the consequences of declining business activity.

The current problem is particularly acute, and for several reasons. First, the railroads' financial position is little improved over the depression low, due to inability to carry through to net earnings any substantial proportion of the increased revenues of the past several years. Second, the volume of railroad employment cannot be greatly reduced below the present levels if satisfactory service is to be rendered the public. Third, operating costs have increased sharply in the past few years, while average revenues per ton-mile and per passenger-mile have been steadily going down.

OPERATING COSTS

Wages.—Railroad operating costs are made up principally of wages, fuel, material and supplies, and taxes. Since 1933, there have been substantial increases in wage rates and in unit prices paid for fuel, material and supplies, while new taxes have been created.

Comparing 1937 with 1933, railroad wage rates increased about 18 per cent. This increase was due in part to restoration of the ten per cent wage deduction which was in effect in whole or in part from Feb. 1, 1932 to April 1, 1935; in part to wage increases of five cents per hour granted to non-transportation forces effective Aug. 1, 1937; and in part to wage increases of 44 cents per day granted to train and engine forces, effective Oct. 1, 1937.

Restoration of the ten per cent deduction meant an annual increase of $175,000,000 in railway payrolls. The wage increases of 1937, when projected on an annual basis, approximated $134,000,000. These increases averaged about seven per cent, and were granted to the employees after negotiation, followed by prolonged mediation under the provisions of the Railway Labor Act. The employees' original demands were for 20 per cent, and 20 cents per hour, respectively, and were backed up by the taking of strike votes and the threat of strikes.

Material Costs.—In 1937, railroad purchases of fuel, material, and supplies approximated $850,000,000. Prices paid for materials and supplies other than fuel were 38 per cent higher in October, 1937 than in May, 1933; coal prices were 37 per cent higher, and fuel oil prices were 73 per cent higher in August, 1937 than in May, 1933. The coal price increase of 37 per cent does not include the further increases that became effective on Dec. 16, 1937, by reason of orders of the National Bituminous Coal Commission.

Taxes.—The Railroad Retirement Act of 1937 increased the railroads' tax burden for 1937 by $53,000,000, against which, however, there was an offset on account of pensioners transferred from railroad company to Railroad Retirement Board rolls. In addition, the railroads paid approximately $39,500,000 in 1937 in unemployment compensation taxes, under the Social Security Act, 1935.

Recapitulation.—The several added cost items enumerated above are here summarized on an annual basis throughout:

Restoration of 10 per cent wage deduction	$175,000,000
Wage increases of 1937	134,000,000
Increased cost of material and supplies	241,000,000
Net cost of railroad retirement taxes	23,000,000
Unemployment compensation taxes	39,500,000
Total	$612,500,000

The sum of these items, $612,500,000, constitutes a conservative approximation of the additional cost of railroad operation, 1937 over the level of May, 1933, not including costs incidental to handling an increased volume of business. In other words, if the railroads in 1937 could have operated under the May, 1933 level of wage rates, material prices, and taxes, they would have had $612,500,000 additional with which to repair a part of the depression's ravages.

Without consideration of traffic trends, expenses in 1938 will show a further increase of about $40,000,000, of which $20,000,000 will represent the increased price of coal as a result of minimum prices on fuel established by the National Bituminous Coal Commission effective in December, 1937; while $20,000,000 will be added

to Social Security Taxes, because of an increase in tax rate on Jan. 1, 1938.

FREIGHT RATES AND PASSENGER FARES

Although the railroads in 1937, in common with nearly all business operations, were obliged to meet substantially increased costs of operation, they were not able, as have been other industries, to pass on these costs in the form of higher selling prices for their services. In fact, the general level of freight rates, as measured by average receipts per ton-mile, declined 3.8 per cent under 1936, 11.9 per cent under 1930, and were at the lowest level in over 20 years.

Passenger fares, as measured by average receipts per passenger-mile, declined 3 per cent under 1936, 34.4 per cent under 1930, and were at the lowest level in the annals of American railroading.

In the proceedings docketed as *Ex Parte 115,* the Interstate Commerce Commission granted temporary increases in freight rates on certain commodities, originally effective April 18, 1935. These increases, with certain exceptions and modifications, were continued through Dec. 31, 1936, when they expired, the Commission having declined to authorize their continuance thereafter. Their expiration meant a loss of revenue to the carriers of approximately $120,000,000 annually.

In October, 1936, the railroads petitioned the Commission for permission to make certain changes in their permanent freight tariffs. The case was docketed as a continuance of *Ex Parte 115.* After prolonged hearings, the Commission's decision of Oct. 19, 1937 authorized the railroads to increase their rates on certain basic commodities, but declined similar authority in respect to certain other commodities. It was estimated that the increases allowed would add some $60,000,000 annually to the railroad revenues. Because of the time required to make changes in the tariffs, these increases had but slight effect on 1937 revenues.

At the time of this decision, the margin between revenues and operating costs had been squeezed so thin that the railroads were entering the portals of a new crisis. The downward trend in freight traffic had set in, while the full effects of the wage increases were just beginning to be felt. Accordingly, on Nov. 5, 1937, the railroads filed with the Interstate Commerce Commission an application for authority to make a horizontal increase of 15 per cent in freight rates, except as to five commodities for which certain maxima were requested. The application also sought authority to increase the maximum fare for passenger coach travel in eastern territory from 2 to 2½ cents per mile. The case was docketed as *Ex Parte 123.* Railroads in southern and western territories had already made, or were then in the process of making, certain upward revisions in their passenger fares. These increases fell within the legal maxima set by the Commission in 1936.

The proposed increases in rates and fares are intended to meet a part of the increased costs of operation. Increased revenues per unit of traffic are highly essential if railroad employment, purchasing power, and credit are to be maintained.

Hearings on the carriers' application were inaugurated in Washington on Nov. 29, to culminate some time in the latter part of January, or early February, 1938. The Commission showed every inclination to expedite the matter, many shippers supported the increases, and a decision is expected in the early part of 1938.

RECEIVERSHIPS AND TRUSTEESHIPS

At the end of 1937 a total of 96 steam railroads (of which 36 are Class I carriers) were in the hands of the courts, operated by receivers or trustees. These carriers operate a total of 71,386 miles, or 28.1 per cent of all railroad mileage in this country. This mileage and percentage is the highest in the history of American railroading, and may be compared with the recent low of 5,256 miles, or 2.02 per cent of total mileage, as of the end of 1928.

Since the beginning of the economic depression, not one important carrier

has emerged from receivership or trusteeship. While the procedural stages are sufficiently advanced to permit a few railroads to be returned to operation by their owners in 1938, such a possibility is not a certainty.

PURCHASES AND CAPITAL EXPENDITURES

Railroad purchases of fuel, materials and supplies in 1937 approximated $850,000,000, while gross capital expenditures for additions and betterments to property were about $475,000,000.

The greater proportions of the purchases and capital commitments were made in the early months of 1937, January and February having shown increases of nearly 100 per cent over the comparable months of 1936. Towards the end of the year, purchases were being made only on a necessity basis, and new capital commitments were practically at a standstill.

MOTOR TRUCK COMPETITION

On Nov. 16, 1936, Eastern railroads instituted collection and delivery of l.c.l. freight in Official Classification territory. This marked the culmination of an innovation in merchandise freight service which started with a few southwestern railroads in 1931. The service has now been available almost universally in this country for a complete year. It is yet too early to appraise the effect of this service on the competitive activities of motor trucks, but it is generally believed that the service has brought some l.c.l. traffic back to the rails, and that motor truck competition is slowing down.

The improved competitive status is only partially due to the institution of collection and delivery service, however. Operation of the Motor Carrier Act, 1935, combined with rapid unionization of labor in the trucking industry, has tended to increase the cost of truck operation to a point where truck operators find it increasingly difficult to undersell the railways.

RAILROAD RETIREMENT LEGISLATION

Culminating prolonged negotiations, the railroads and their employees agreed upon a retirement system in the spring of 1937. Thereafter, in June, enabling legislation was passed by Congress, and approved by the President.

The Railroad Retirement Act of 1937 permits but does not require retirement of railway employees at the age of 65, or at the age of 60 after 30 years of service. Retirement for total permanent disability after 30 years of service also is provided. Annuities up to $120 a month are payable, based on years of service and compensation not in excess of $300 per month. Provision also is made for death benefits and for joint and survivor annuities.

A companion measure, the Railroad Retirement Taxing Act of 1937, levies payroll taxes to support the retirement system. An equal tax is paid by both the companies and the employees on employees' wages not in excess of $300 per month. The tax rate started at 2¾ per cent payable by employers and 2¾ per cent payable by employees, as of Jan. 1, 1937, and will increase by three-year stages until it reaches a maximum of 3¾ per cent for each on and after Jan. 1, 1949.

SIGNAL INSPECTION ACT

The so-called Signal-Inspection Act was enacted during the closing days of the 1937 session of Congress. It directs and authorizes the Interstate Commerce Commission to inspect signal devices in use by railroads, and to issue orders regarding their maintenance, operation, repair, replacement, or improvement. The Commission already has taken steps to carry out the mandate of the Act.

LONG-AND-SHORT HAUL BILL

The Pettengill bill, which would ameliorate the hardships occasioned by the operation of the long-and-short-haul clause of the Interstate Commerce Act, was again passed by the House during the first session of the 75th Congress, but was still pending before the Senate Commit-

tee on Interstate Commerce at the end of the year.

TRAIN LIMIT BILL

A train limit bill, arbitrarily limiting the length of all freight trains to 70 cars, passed the Senate, without a record vote, in August, 1937. It is scheduled for hearing before the House Committee on Interstate and Foreign Commerce early in 1938.

This bill, if enacted into law, would effectively throttle the railroad managements in their efforts to give America better and safer transportation at the lowest possible cost. It would render useless much of the huge capital expenditures made by the railroads in the years since 1922. Excepting those train and engine employees who are sponsoring it, it would be beneficial to no class or group, but would turn back the clock in regard to safety, efficiency and economy in railroad operation, and service to the public.

The direct cost to the railroads would be no less than $100,000,000 annually, to which must be added several hundred million dollars in non-economic capital expenditures which would be necessary, in order to equip the carriers to handle the same traffic in more trains. Its indirect cost, through loss of traffic to less-restricted forms of transportation, cannot be calculated.

SPECIAL FINANCING

As of Nov. 30, 1937, the status of loans made to the railroads by the Reconstruction Finance Corporation and the Public Works Administration, two government agencies, was as follows:—

Total loans	$738,100,739
Repaid by railroads	224,839,175
Sold to the public at a net profit of $4,702,563	106,497,000
Still due	$406,764,564

During the first 11 months of 1937, the carriers repaid a total of $15,579,764, and negotiated new loans of $20,150,000.

In the 11 months to Nov. 30, 1937, the Railroad Credit Corporation distributed to participating carriers a total of eight per cent of its original loan fund of about $75,000,000, bringing total distributions up to 76 per cent of the amount in the fund.

FREIGHT TRAFFIC, CLASS I RAILWAYS

	1930	1936	1937
Revenue carloadings (000)	45,878	36,063	38,000
Revenue ton-miles (000,000)	383,450	339,246	362,000
Average revenue per ton-mile (cents)	1.063	0.974	0.937

Revenue carloadings of 38,000,000 cars in 1937 represented a gain of 5.4 per cent over 1936, and were the highest of any years since 1930. An increase in revenue ton-miles of 6.7 per cent over 1936 brought the total for 1937 to within 5.6 per cent of 1930.

PASSENGER TRAFFIC, CLASS I RAILWAYS

	1930	1936	1937
Revenue passenger-miles (000,000)	26,815	22,421	24,852
Average revenue per pass.-mile (cents)	2.72	1.84	1.78

Revenue passenger-miles moved up 10.8 per cent over 1936, and attained the highest level since 1930, being 7.3 per cent under that year. The sharp reduction in average revenue per passenger-mile reflected the reduction in basic passenger fares in eastern territory ordered by the Interstate Commerce Commission in 1936, as well as the effect of earnest efforts by the railroads throughout the country to improve the speed and comfort of passenger trains, so as to bring travelers back to the rails.

OPERATING REVENUES, CLASS I RAILWAYS

(Millions of dollars)

	1930	1936	1937
Freight	$4,083	$3,309	$3,396
Passenger	730	412	443
Mail	111	96	96
Express	115	60	58
Other	242	176	192
Total	$5,281	$4,053	$4,185

Freight revenue in 1937 increased 2.6 per cent over 1936, and exceeded that of every year since 1930, although it stood 16.8 per cent under that year. Passenger revenue increased 7.5 per

cent over 1936, but was 39.3 per cent less than in 1930. Total operating revenues in 1937 increased 3.3 per cent over 1936, but were 20.8 per cent under 1930.

Because of drastic reductions in freight rates and passenger fares, railway revenues in 1937 were more than 20 per cent below those of 1930, although the traffic volume was only from six to seven per cent below that of 1930.

OPERATING EXPENSES, CLASS I RAILWAYS

(Millions of dollars)

	1930	1936	1937
Maintenance of Way	$ 706	$ 455	$ 493
Maintenance of Equipment	1,019	783	834
Traffic	128	100	105
Transportation	1,848	1,405	1,520
General and Other	230	188	175
Total	$3,931	$2,931	$3,127

All classes of operating expense, except general expense, increased in 1937 over 1936. Total operating expenses increased 6.7 per cent. The increases were due to the increase in the cost of materials and supplies, increases in wage rates, and increased employment.

NET EARNINGS, CLASS I RAILWAYS

(Millions of dollars)

	1930	1936	1937
Net railway operating income	$ 869	$ 667	$ 590
Rate of return on property investment	3.30%	2.59%	2.27%
Net income after fixed charges	$ 524	$ 165	$ 85

After the payment of operating expenses, taxes, and equipment and joint facility rentals, the railroads earned a net railway operating income of $590,000,000 in 1937. This was a decrease of 11.6 per cent compared with 1936, and 32.1 per cent compared with 1930. It represented a rate of return on property investment of 2.27 per cent, considerably below the moderate returns in 1936 and 1930.

Net income after accruals of fixed charges amounted to $85,000,000, a decrease of 48 per cent compared with 1936, and a decrease of 84 per cent compared with 1930. During the seven years 1931 through 1937, the railroads earned an aggregate net income of only $229,977,344, or 56.1 per cent less than the total of the one year 1930.

RAILWAY EMPLOYEES

	1930	1936	1937
Average number (000)	1,488	1,066	1,118
Aggregate compensation (000,000)	$2,551	$1,849	$1,973
Average earnings:			
Per year	$1,714	$1,735	$1,765
Per hour (cents)	67.8	69.1	70.6

The average number of employees on railroad payrolls increased from 1,066,000 in 1936 to 1,118,000 in 1937. Nevertheless, in the final months of 1937, the number of employees was less than in the comparable months of 1936. Aggregate compensation of employees increased over 1936 by $124,364,000, or 6.7 per cent.

Average earnings per employee, on both hourly and yearly bases, increased over 1936, and stood at the highest point in railroad history. The average yearly earnings of $1,765 compared with the previous high of $1,744 in 1929; average hourly earnings of 70.6 cents compared with the previous high of 69.1 cents in 1936 and the next earlier high of 68.9 cents in 1931.

HIGHWAYS

By Thomas H. MacDonald

Chief, Bureau of Public Roads, Department of Agriculture

FEDERAL-STATE CO-OPERATIVE WORK

The mileage of highway brought to completion with Federal funds administered by the Bureau of Public Roads reached a new high in the fiscal year ended June 30, 1937—22,000 miles of roads of all classes. By far the greatest part of this work was done in co-operation with the state highway departments under the plan in use since 1916 for the improvement of Federal-aid roads. In this co-operative work 18,768 miles were brought to completion. This program included a great variety of work ranging from the improvement of secondary or feeder roads to serve agricultural communities to the building of magnificent four-lane highways to carry the great volumes of traffic that now flow over some of the main highways. A considerable portion of the work consisted of widening, straightening, and providing safety features to make roads safe for traffic at modern speeds. Safety was a primary consideration in all of the work on both entirely new construction and improving roads already surfaced.

Work of benefit to all classes of road users was done. On rural portions of the Federal-aid system 10,257 miles were completed. These are main highways used by everyone who drives or rides in an automobile. Congestion was relieved and flow of traffic facilitated by the improvement of 1,093 miles of extensions of the Federal-aid system into and through cities. Most of these projects were of a particularly urgent nature since facilities for the movement of traffic on main routes in cities have not kept pace with rural improvements in past years. City residents benefited further by the completion of 571 miles of roads and streets not on the main traffic routes. For the benefit of agricultural communities the Federal Government aided the States in completing 6,847 miles of secondary or feeder roads. This work enables many thousands of farmers, formerly isolated in winter and hampered by poor roads in summer, to reach their markets over good roads at all seasons of the year.

TYPES OF ROAD COMPLETED

	Miles
Graded and drained	3,703.1
Sand-clay, treated and untreated	850.9
Gravel, treated and untreated	7,631.3
Macadam, treated and untreated	606.9
Low-cost bituminous mix	2,399.4
Bituminous macadam	187.1
Bituminous concrete	643.5
Portland cement concrete	2,593.5
Block	28.3
Bridges and approaches (surfaced)	69.6
Grade separations (between highways and between highways and railroads)	54.5
Total	18,768.1

In the Federal grade crossing elimination program 1,149 crossings were eliminated, 196 separation structures were reconstructed, and 574 crossings were protected by signals or warning devices.

The total cost of constructing the 18,768 miles of road and of the work at grade crossings was $406,514,958 of which $319,632,867 was contributed by the Federal Government. Of the Federal funds approximately $78,000,000 was supplied as regular Federal aid and more than $241,000,000 from emergency funds, being the remainder of sums authorized to provide employment through highway construction.

BROADENED FEDERAL-AID PROGRAM

The emergency highway and grade crossing funds available for new work were practically exhausted during the year and the end of the year marked the last stage of the emergency road-construction program, but it also marked the beginning of a broadened

Federal-aid program. Improvement of the Federal-aid highway system, begun in 1921, is being continued; and two new classes of Federal-aid operation are being initiated—Federal aid for secondary or feeder roads and for the elimination of hazards at grade crossings. Federal participation in these classes of work was begun in the emergency program with direct grants of funds and is to be continued under specific Federal-aid authorizations.

Continuation of the broadened highway program through the fiscal years 1938 and 1939 has been provided for in the act of June 16, 1936. This act authorizes regular Federal-aid appropriations of $125,000,000 for each of the two years and also authorizes for these years annual appropriations of $25,000,000 for secondary roads and $50,000,000 for the elimination of hazards to life at railroad grade crossings.

The funds for highways and secondary roads must be matched by the States and are to be apportioned on the basis provided in the Federal Highway Act. The funds for grade-crossing work are outright grants to the States and are to be apportioned one-half in proportion to population, one-fourth in proportion to mileage of the Federal-aid highway system, and one-fourth in proportion to railroad mileage.

ROAD CONSTRUCTION IN FEDERAL AREAS

The principal Federal road building activity is carried on with funds apportioned to all States and in cooperation with state highway departments but the work done independently in Federal areas, repair of flood damaged roads. and road work to give relief in special areas aggregated nearly 4,000 miles in the last fiscal year.

The system of roads that has been created in national parks and national forests is of interest not only to the millions of people who find healthful recreation in highway travel each year, but a large portion of these roads are important links in the general highway system. There are few main routes in the western States that do not cross forest or park areas at one or more points.

During the fiscal year improvements were completed on 139 miles of the forest-highway system, exclusive of work done in further improving surfaces previously placed, bringing the total mileage improved to date with Federal funds to 6,592.7 miles. Of the mileage improved during the year, 108.6 miles were in the western States and Alaska, and the remaining 30.4 miles were in the forests of eight eastern States. Of the total mileage improved to date, 5,983.2 miles are in the West and 609.5 miles are in the East.

In the national parks, parkways, and monuments, 169 miles of roads were completed, bringing the total to 1,293 miles.

In addition to the above there were completed during the fiscal year 246 miles of roads in public lands, 33 miles of flood damaged roads, 1,532 miles of road in special areas to provide work relief, and 1,900 miles of loan-and-grant construction initiated by the Public Works Administration and supervised by the Bureau of Public Roads.

HIGHWAY PROGRAM TO RELIEVE UNEMPLOYMENT

With the emergency program of highway construction nearing completion it is appropriate to review the accomplishment in this major effort of the Federal Government to relieve unemployment through a large-scale road-construction program. The program began with an authorization of $400,000,000 as a direct grant to the States by the National Industrial Recovery Act of June 16, 1933. One year later the Hayden-Cartwright Act of June 18, 1934, authorized a supplementary $200,000,000. The program was continued by allocation of $200,000,000 for highways and $200,000,000 for grade-crossing elimination and protection, as direct grants to the States made from funds provided by the Emergency Relief Appropriation Act of April 8, 1935. These various acts also provided lesser

amounts for the improvement of highways in national parks, national forests, public lands, and other Federal areas.

The work of highway construction carried out under these several acts had resulted, at the end of the last fiscal year, in the construction of 55,920 miles of road at a total cost of $956,138,230, of which $807,140,005 was paid by the Federal Government; and there were under construction, or approved for construction, 12,446 miles additional, involving an estimated total cost of $343,996,739, of which $200,395,350 was to be met with Federal funds. The remaining Federal funds, available for new projects, including Federal aid for the fiscal year 1938, but exclusive of the new funds for secondary roads and grade crossings, amounted to $150,214,645. This amount consists largely of the Federal-aid authorization for 1938.

Under the grade-crossing program with both highway and special grade crossing funds, 1,849 crossings had been eliminated, 206 existing crossing structures reconstructed, and 737 crossings protected by safety devices at a total cost of $121,187,314, of which $116,478,687 was Federal funds. There were under construction or approved for construction 834 crossing eliminations, reconstruction of 151 existing elimination structures, and protection of 733 crossings with safety devices. The total cost of this work was estimated at $106,563,341, of which $102,433,856 was Federal funds. The emergency funds for elimination of hazards at grade crossings were practically all absorbed in completed or active work since only $8,729,528 remained for new work.

During the last four years the road construction described above and that carried on under other appropriations in Federal areas of various kinds has provided 7,700,000 man-months of direct employment, or an average rate of nearly 2,000,000 man-months per year, which is approximately double the average of employment furnished in the two years preceding the beginning of the enlarged emergency program.

PROBLEMS OF HIGHWAY FINANCING

During the pioneer period of road development the attention of state and Federal governments was properly centered on the Federal-aid system, the network of main rural highways of interest to all classes of highway users. The initial surfacing of most of this system has now been completed, and service is being given to a rapidly growing and altering traffic of tremendous economic and social significance; but much remains to be done to provide an entirely adequate service. Meanwhile there has developed a widespread and justified demand for better road service for communities not directly on the main highway system, a demand which has been answered in a measure by the Congressional provision for improvement of secondary and feeder roads. And, at the same time, it has been recognized that extension of the main routes into and through cities is a general responsibility. Such routes are rapidly being placed under the care of state highway departments, and, beginning with the fiscal year 1936, Federal aid became available for extensions of the Federal-aid system into and through cities. In consequence of these developments, State and Federal highway officials are now confronted with the necessity of planning and constructing three important classes of highways—main rural highways, extensions of these routes through cities, and the secondary or feeder roads.

It is now evident that the States must depend mainly on special revenue from road users for funds with which to carry on this work. Property taxes and appropriations from general funds for highways have shrunk to small proportions and there is little reason to expect that they will be increased, yet nearly one-sixth of present motor-vehicle revenues are being assigned to non-highway uses. Federal contributions are continued but not on the scale of the past four years when large emergency funds were made available. The new fund of $25,000,000 for secondary and feeder roads represents an increase in regu-

lar Federal-aid funds and will provide a considerable mileage of much needed roads but the sum is small compared with the needed mileage of feeder roads. However, these funds have an important and timely significance in that they place this important problem in the hands of state and Federal road-building agencies and give to them the opportunity for orderly planning of the larger operations that must follow if a satisfactory solution is to be had.

The state highway departments, confronted with increased responsibilities out of all proportion to the revenues available to them and pressed with sound arguments to provide improvements in all directions, face difficult problems in administration.

Improvement of secondary roads is important but such work must not be allowed to impede the necessary further work on the main highways. Construction of through routes was begun some 15 or 20 years ago when the speed of vehicles was much slower and traffic considerably less in volume. The roads built were designed for conditions as they were then foreseen, and were influenced somewhat by the necessity of rapidly extending the mileage. Engineering standards in respect to sight distance, curvature, and grade have been steadily raised but much of the early construction reflects the earlier lower standards and is unsafe for modern traffic. The outstanding reason for continued improvement of the main highways is to permit travel with facility and safety. The condition of these highways cannot be considered satisfactory so long as many sections present unexpected dangers to the motorist.

HIGHWAY PLANNING SURVEYS

By the Hayden-Cartwright Act of 1934 and subsequent legislation the Secretary of Agriculture has been authorized to approve allotment of not to exceed 1½ per cent of the amount of Federal highway funds apportioned for any year to be used for surveys, plans, and engineering and economic investigations of projects for future construction.

Realizing the need of facts of many kinds as a basis for the planning of future construction programs in all States, the Bureau of Public Roads in 1935 proposed that the expenditure thus authorized be devoted to the conduct of comprehensive fact-finding surveys. The proposal has since been adopted by one State after another and the state-wide, highway-planning surveys, as they are called, are now in progress in all States with the exception of Connecticut, Delaware, Mississippi, New Jersey, and New York.

The surveys consist of a number of related studies the object of which is to determine the present state of the whole rural highway system, to rate the service rendered by all parts of the system, and to make possible a selection of that part of the whole system which, by reason of its relative importance and absolute utility, merits inclusion in future improvement plans. The surveys also aim to assemble the facts necessary for an estimate of the ultimate cost of building and maintaining the economically necessary improved highway system; and finally to make possible the establishment of a definite, economically and socially defensible, integrated highway-improvement program in all States.

In order that the facts shall be collected in the various States on a comparable basis, all the surveys follow a general plan developed by the Bureau, which has assigned to each State a representative to maintain contact between the Bureau and the State survey organization.

Field work on three phases of the surveys (road inventory, traffic surveys, and financial and road-use surveys) has been practically completed in most of the States. The field work of the road inventory, by means of which complete records of all existing roads will be obtained, together with a determination of their conditions and the property they serve, has been completed in 31 States in which there is an aggregate road mileage of 2,035,067. In nine States, with an estimated road mileage of 598,151, the mileage inventoried up to June 30 was 468,962. County base-map trac-

ings are being prepared as a basis for state maps which will for the first time give a complete picture of our road system.

The States which have completed the field work on the traffic survey and the financial and road-use surveys are now tabulating and analyzing the great mass of data that has been collected. The traffic surveys have produced information as to the character and volume of traffic on each section of highway, from which the relative importance of each highway may be determined. In the financial and road-use surveys studies have been made of the sources of highway revenue, the purposes for which it is spent, the extent to which rural and urban residents contribute to the cost of each class of road, and the amount of benefit they derive by travel upon each class.

The surveys also include a determination of the life of surfaces, grades, and structures built on the State highway systems in the past, so far as the records permit, to the end that a more dependable estimate may be made of the average term over which future capital investments must be amortized.

At all grade crossings of highways and railroads the facts of physical condition and density of rail and highway traffic are being determined to facilitate establishment of a priority list of crossings to be abolished or protected. At selected places other studies are being made to determine the ability of motor trucks and tractor-trailer combinations to surmount grades of various steepness in order to ascertain what needs to be done to alter the present designs of highway or vehicles, or both, to prevent slow-moving freight vehicles from obstructing other traffic.

HIGHWAY SAFETY

During the year the Bureau conducted studies of traffic conditions and measures for highway safety as directed by Congress in 1936 to the extent possible within the limits of the $75,000 authorized to be expended for the purpose. A committee of 12 outstanding experts in highway engineering, all of them State highway officials, was appointed by the Secretary of Agriculture to work with the Bureau in the development of design standards for the promotion of safety of traffic.

Under authority of the act approved June 23, 1936, a series of research projects in highway safety was conducted, in co-operation with the Highway Research Board of the National Research Council. Particular attention was given to three phases of the problem: 1. uniformity of State motor-vehicle laws; 2. improvement of basic data, particularly accident reporting needed for the study of accident causes and prevention; and 3. the characteristics and habits of drivers, including the identification of dangerous drivers.

A report has been made to Congress recommending: (1) That appropriate steps be taken to effect greater uniformity of motor-vehicle and traffic laws, especially in essential details. Diverse traffic regulations make the driver who has formed his driving habits in one locality a frequent though involuntary lawbreaker when he leaves his own community. (2) That uniform minimum standards be developed for methods of obtaining facts regarding the occurrence of accidents and the attendant circumstances, and for methods of analysis that will more exactly recognize and interpret the facts. (3) That a careful study be made of inspectional services as a means of assuring safe condition of cars in operation. Since many drivers do not know the limitations of their vehicles or of their own sensory reactions, it is of paramount importance that brakes and lights, at least, be kept in first-class condition. (4) That studies be made to determine whether and to what extent highway patrol organizations may be expanded to advantage. (5) That further continued research be made in several lines related to highway safety.

The possibility of identifying applicants for drivers' licenses who are liable to come within the accident-prone class of drivers has been given limited study, and this highly important work should be continued.

THE MOTOR BUS INDUSTRY

By Carl W. Stocks

Editor, *Bus Transportation*

INCREASED REVENUE AND PATRONAGE

The year 1937 promised to establish an all-time high record in bus company revenues. Riding in the third quarter in particular was the best three months the industry has had within the past five years. This was accomplished in the face of the severest competition highway carriers have yet had to meet. It is the first real quarterly comparison possible since rates were cut in June, 1936. In other periods at least one month in the comparative quarter had a higher rate of fare. The fare cut referred to took place June 1, 1936, when a 40 per cent downward revision of bus fares was made to meet rate reductions by Eastern railroads.

An interesting trend was revealed by the fact that, despite lower rates of fare, the average fare per passenger was higher. This was because the average ride was considerably longer. As a consequence each bus in service during 1937 produced more revenue both on a per vehicle and on a per bus-mile basis.

As was to be expected, the tax collector was out for his share, taking 9.21 cents from each revenue dollar, or 2.55 cents for each bus mile operated. This was a higher tax average than for any similar period in the past. Income taxes and excess profits taxes, while lower than the previous year, slashed so deeply into corporate profit and loss that it is doubtful if actual net profits, on a percentage basis, exceeded those of previous years, despite the better gross revenues.

The reasons for the increase in intercity travel were plain. People not only had more money to spend, but the gradually increasing tendency toward a shorter working week provided more and more leisure time. Encouraging the trend toward more intercity bus travel was the fact that bus fares during the past 18 months were at the lowest in history, in many cases only slightly over one cent a mile when round trip tickets were used.

In the field of local bus operation, *i.e.*, within the limits of city and suburban communities, the business recovery during the early part of the year, which put people back to work, accounted for the increased local riding, although the fact that a good many street railways abandoned rail service and substituted buses added favorably to the bus picture.

SCOPE OF THE INDUSTRY

Preliminary estimates showed that, at the end of 1937, there were approximately 127,000 buses in the United States, including all classes of carriers—common carrier, school, sightseeing and miscellaneous services. There are now about 25,000 buses operating in intercity service, 23,000 operating in purely city or local service, and 2,000 in sightseeing service. The school portion of the bus industry utilizes some 77,000 buses. These latter, of course, are used mainly in rural districts to carry pupils to and from schools. About one-fourth of these school buses are owned by school districts and the balance are operated under contract by private individuals. Analyzing the foregoing figures by groups, it is found that there are now in operation about 50,000 buses in common carrier service, including those engaged in sightseeing and charter work, and approximately 77,000 in school and other miscellaneous non-common carrier services.

Estimates were that for the full year approximately 480,000,000 persons rode intercity bus lines, spending something like $281,000,000 for that purpose. The 3,000,000,000 persons who, according to preliminary estimates, rode local and city buses during 1937 paid a total of approximately $193,800,000, while the 5,000,000 peo-

ple who went sightseeing by bus before the end of the year contributed about $8,000,000 for their sightseeing. The school bus portion of the industry caters daily to the needs of some 3,500,000 children who by this means are carried from their homes to consolidated schools and returned safely again in the evening—a contribution to the education of young America of which the bus industry is justifiably proud.

RECORD NEW BUS PURCHASES

New developments in bus equipment during the year were mainly a matter of slight modifications to the advanced models brought out last year. To put it in another way, the bus manufacturers have been so rushed filling orders for new bus equipment that they have had little time and less inclination to think about bringing out new and radically different models. In general, this is looked upon as a good thing, for it has given manufacturers a chance to perfect their current lines, and straighten out a few "bugs" still left in them. A great deal of the money the industry earned during 1936 and 1937 has been turned back into the purchase of new equipment, and deliveries of new buses for 1937 will certainly exceed the 1936 totals, and they were an all-time record. Estimates are that about 19,000 new buses were delivered to bus operators at the end of the year, representing an investment of close to $90,000,000.

LABOR AND WAGES

Increases in wages were granted in many instances during the year to all classes of employees. Especially was this true on city properties during the early months. The record of the later period is not yet complete, but more than 80 wage increases are known to have been made in the first half of 1937. The increases are becoming larger and the amounts range from as high as 20 cents per hour to a low of 1½ cents per hour, with more than a third of the increases 5 cents per hour or more. These trends, of course, have had a marked effect on net earnings.

The limit in wages that a bus company can pay is hard to determine but, generally speaking, all wages and salaries ought to be around 40 per cent of the operating revenue for city companies and 30 per cent for intercity carriers. The employment density is increasing. In the first nine months of 1936 it took 16.70 to 24.58 employees for each 100,000 miles of operation, the city carriers having the highest ratio. In the first nine months of 1937, intercity carriers required 16.70 employees, slightly less than the previous year, while city companies required 24.58 which is higher, and city and suburban companies 19.63. In other words, more manpower seems to be required in city bus service than heretofore. This is because of the rush-hour problem and the necessity of providing sufficient personnel to permit vacations with pay.

Records on file with the magazine *Bus Transportation* show that, in general, the investment per employee in the intercity bus business is approximately $4,700 and for the city companies approximately $5,880. In other words, in order to put one man to work, capital to the amount of approximately $5,000 must be invested in the bus business before that man has a job.

The total investment in the bus industry has now reached the astounding figure of approximately $450,000,000 for plant and equipment. This figure applies to the common carrier industry alone. If all branches of the bus industry are included, both common and non-common carriers, the latter representing school and other non-profit services, the total investment is not far short of $495,000,000 for equipment and an additional $200,000,000 for terminals, garages and shop equipment. The common carrier industry provides employment for some 110,000 persons and has an annual payroll of approximately $160,000,000.

MERGERS AND CONSOLIDATIONS

Under the motor carrier act of 1936 the Bureau of Motor Carriers

has jurisdiction over consolidations and mergers of companies operating interstate. The largest consolidation yet approved was the merger of 36 subsidiaries of the Greyhound Corporation into seven organizations under the management of the Greyhound Corporation. The idea was to effect economies by tightening the financial structure. There have been a few other consolidations and mergers during the past two years with the same general idea in mind—to economize and to strengthen the companies financially and to give better service.

Purchases and sales of securities under the act also are vested in the Motor Carrier Bureau. There have been some financial deals along this line, the largest concerning the Greyhound Corporation. In this case the I.C.C. approved an issue of $1,950,000 of 5½ per cent preferred stock to pay dividends of 75 cents a share to common stockholders. As yet, fares and tariffs have received little attention from the Bureau except that all carriers have been compelled to file their rates and charges.

From a bird's-eye viewpoint there is no doubt whatever that a steady and healthy growth is being enjoyed by the various branches of the bus industry. The carriers are thus becoming larger and more substantial. In cities buses continue to replace existing trolley car operations at a fast rate, and their use to open up new local territory has been intensified. The lessons of the last half dozen years have left the industry immeasurably wiser, and the huge sums of money currently being invested in the bus industry in the form of new equipment and facilities are an index to the supreme faith that an exceedingly canny group of business men have in their gasoline-propelled industry.

COMMUNITY TRANSIT

By John A. Miller

Editor, *Transit Journal*

OPERATING REVENUES

Operating revenues of the transit industry in the United States during the first three quarters of 1937 were about 3 per cent ahead of the corresponding period of 1936. During the last quarter, however, the rate of improvement was much reduced, with some weeks showing actual decreases as compared with the corresponding weeks of the previous year. Thus the gain for the entire year 1937 was only about 2 per cent over 1936, or $779,153,000 as compared with $765,756,000.

All types of transportation did not share equally in the gains. In the cities of over 500,000 population and in interurban areas, the electric surface railway revenues showed moderate increases. Elsewhere they declined, so that surface railway revenues for the industry as a whole were slightly lower in 1937 than in 1936. Rapid transit and electrified suburban railroad revenues also fell a little below those of the previous year. Trolley bus and motor bus revenues, on the other hand, showed large increases due to the continued expansion of these types of operation.

PASSENGER TRAFFIC

More than 13,000,000,000 passengers were carried by the transit industry in the United States in 1937. This was a gain of approximately 300,000,000 over the number carried in 1936 and was the largest for any year since 1931. Distribution of riding among the various types of transit service showed comparatively little change from the preceding year. Rail lines in the aggregate carried 74 per cent of the total passengers, as compared with 76 per cent in 1936. This was made up of approximately 55 per cent on the electric surface railways, 18 per cent on the rapid transit lines and one per cent on the electrified suburban railroads. Highway transit serv-

ices—trolley buses and motor buses—carried 26 per cent of the total number of riders. Of this the trolley buses carried two per cent as compared with one per cent in 1936 and the motor buses 24 per cent as compared with 23 per cent the year before.

SUMMARY OF TRANSIT OPERATION IN THE UNITED STATES, 1890-1937

	Operating Revenue Jan.1–Dec. 31	Passengers Carried Jan. 1–Dec. 31	Miles of Electrified Track‡ as of Dec. 31	Miles of Trolley Bus Route as of Dec. 31	Miles of Motor Bus Route as of Dec. 31	Number of Passenger Cars as of Dec. 31	Number of Trolley Buses as of Dec. 31	Number of Motor Buses as of Dec. 31
1890*	$ 90,617,211	2,023,010,202†	8,123†	0	0	32,505†	0	0
1902	247,553,999	4,774,211,904†	22,577†	0	0	60,290†	0	0
1907	430,687,858	9,583,081,000	34,382†	0	0	70,016†	0	0
1912	602,511,704	12,285,342,000	41,065†	0	§	76,162†	0	§
1917	763,325,092	14,726,914,573	44,835†	0	§	79,914†	0	39
1922	1,014,727,485	16,161,846,851	43,932†	22	685	77,301†	28	370
1927	1,084,439,961	16,855,435,276	41,967	31	18,007	70,309†	29	8,854
1932	745,323,819	11,745,985,108	34,742	276	26,604	64,585	285	16,693
1933	675,710,574	11,050,400,000	33,973	378	24,061	61,413	395	16,309
1934	710,374,526	12,103,200,000	32,028	467	24,933	58,225	448	17,411
1935	718,756,945	12,201,402,000	30,612	589	26,520	54,204	648	19,100
1936	765,756,000	12,984,842,000	29,319	850	27,717	51,730	1,154	22,104
1937	779,153,000	13,261,860,000	27,684	1,184	30,155	48,501	1,662	25,614

* Includes cable and animal traction lines.
†U. S. Census.
‡ Does not include electrified track of truck line railroads doing exclusively long haul business.
§Not available.

FARES AND COSTS

Changes in fares were so few during the year 1937 that the average figure changed only about fourtenths of one per cent. Contrasting with the steadiness of the fare index, however, cost figures went up sharply. Average wages registered an increase of 5¼ per cent. Costs of operating materials climbed to a high in the late summer and then dropped somewhat at the close of the year, recording a net increase of eight per cent.

EQUIPMENT PURCHASES

Purchases of new transit equipment totalled nearly 6,000 vehicles in 1936, setting an all-time high record. During the first part of 1937 the industry's purchases of new equipment continued at about the same level as 1936. In the latter part of the summer, however, the flow of orders dropped off somewhat and the high record of 1936 was not duplicated in 1937. Altogether a total of approximately 5,200 new vehicles were ordered during the year, including 350 street cars, 300 rapid transit cars, 500 trolley buses, and 4,000 motor buses.

One of the most significant characteristics of the year's equipment buying was the number of repeat orders for "Presidents' Conference" type street cars, indicating that this type of vehicle has definitely proved its value in local transportation service. Los Angeles, Pittsburgh and San Diego were the cities where repeat orders were placed. Washington ordered P.C.C. cars on the basis of results obtained with a number of its own cars of similar type and the

results in other cities. The Philadelphia Rapid Transit Company ordered 20 P.C.C. cars for experimental use in connection with an extensive modernization program which is being undertaken.

Orders for rapid transit cars were placed to supplement equipment already in use. Extensions of New York City's Independent Subway System have brought so much additional riding that more equipment is necessary. Philadelphia is now engaged in completing the Chestnut Street section of the subway system and will open this line in a few months. Cars are now on order of the same general design as those placed in service last year on the Delaware River Bridge line.

TROLLEY BUS ORDERS

More transit operating companies ordered trolley buses in 1937 than ever before. The number of new vehicles ordered, almost 500, was about the same as in the record year 1936. The proportion of two-motor units grew from 58 per cent of the 1936 total purchases to nearly 70 per cent of the 1937 total purchases. There was also a larger variety of sizes of trolley buses ordered in 1937, including designs with seats for 30, 33, 36, 38, 40, 41 and 42 passengers. Of these the 40 and 36 passenger vehicles were by far the most popular.

An order of particular interest during the past year was that of the Baltimore Transit Company for 21 units. This company had previously operated trolley buses from 1923 to 1930; then they were discontinued. The order placed late last year thus marks the re-entry of this operator into the field with modern vehicles. Another interesting order is that of the Honolulu Rapid Transit Company for 30 vehicles. This company has been putting through a far-reaching program of modernization and the trolley bus order is part of that program. The order for 195 "all-service" vehicles placed by Public Service Co-ordinated Transport on Jan. 1, 1937, was by far the largest single order ever placed for trolley buses. These units are of special design so arranged that they can be operated by electrical energy from overhead wires, or by energy obtained from their own engine-generator sets.

POPULARITY OF THE SMALL BUS

Purchases of motor buses by the transit industry continued at a high level during 1937, the total number for the year being approximately 4,000. This was somewhat below the record-breaking figure for the preceding 12 months, but about the same as the total for 1935. Thus 1937 was the third consecutive year in which the buying of motor buses was extremely active.

Distribution of the purchases among vehicles of various sizes was much the same as it was in 1936. This showed a marked tendency on the part of the industry toward the small capacity bus, particularly for light traffic and feeder lines, sales of this type far exceeding all others. The medium size cities, communities of 100,000 to 500,000 population, again purchased a greater number of buses than any other group of cities. A considerable increase in the number of gas-electric and Diesel-electric vehicles was noted. These units are being experimented with over an increasingly wide area.

Over a long period of years the transit industry has purchased an average of about 3,000 new vehicles a year. During the period from 1930 through 1934, however, the buying of new equipment fell substantially below the average figure. The deferred purchases of this period have not yet been made up and it may be expected, therefore, that the industry will continue for some years to come to buy well above the average annual number of new vehicles despite any minor fluctuations in revenue.

ROUTE AND EQUIPMENT

Changes in the trackage and bus route mileage of the transit industry were relatively few during 1937. Taking the industry in the United States as a whole, the end of the year found

it with about 1,000 miles of track and bus route more than were in operation at the beginning of the year, an increase of approximately two per cent. This net change was the result of an increase of 300 miles in trolley bus route and 2,400 miles in motor bus route, offset by the abandonment of 1,700 miles of electric surface railway track.

Shifts from street railway operation to trolley bus and motor bus operation in the small and medium size cities were reflected in the figures for vehicles owned at the close of 1937. In the group of cities of 100,000 to 500,000 population the number of street cars was reduced by about 2,000 during the year, while the number of trolley buses was increased by 300 and the motor buses by 1,700. In the group of cities of 25,000 to 100,000 population the street cars decreased by 900 and the buses increased by an approximately equal amount.

Somewhat different trends were discernible in the cities of over 500,000 population and in the interurban areas. In the large cities there was a decrease of about 500 in street cars and an increase of 1,000 in trolley buses and motor buses, reflecting the growing use of small buses on short headways. Interurban areas showed a small net decrease in total vehicles, as the number of buses added was smaller than the number of cars scrapped. For the industry as a whole, the year produced a net increase of about 800 in the total number of vehicles.

THE OUTLOOK

Since there is always a close relation between industrial employment and transit riding the revenue trend of the industry in 1938 will depend to a considerable extent upon general business conditions. At the same time, the base upon which transit riding is built is so broad, embracing as it does practically all of the 35,000,000 persons gainfully employed in this country aside from those employed in agriculture, that it appears likely that fluctuations that may occur in employment will cause only moderate fluctuations in transit revenues.

MERCHANT MARINE

By Peter Bain

Consulting Naval Architect

THE MARITIME COMMISSION'S ECONOMIC SURVEY

After two decades of attempted rejuvenation of the American merchant marine, an unusually well-buttressed conclusion has been reached concerning its current status. A "very sick industry," commented Joseph P. Kennedy, chairman of the United States Maritime Commission, in the first paragraph of his supplementary statement to the special report submitted to Congress by the Commission relative to its economic survey of American shipping. Between 300 and 350 new ships are estimated to be urgently essential before the United States can hope to begin to compete successfully with modern and fast foreign-flag fleets. As a result of our remarkable achievement in constructing and commissioning many hundreds of commercial vessels as an offset to the U-boat sinkings, there was awakened and developed a latent ambition to recreate and possess at the earliest possible moment a merchant marine capable of transporting overseas around 50 per cent of our international trade. Incompetency of direction and lack of knowledge of what the recreation, possession and maintenance of a merchant marine involved seem to have prevailed from its inception until the United States Maritime Commission assumed control.

It may also be said that until President Franklin D. Roosevelt interpolated his influence and personal knowledge of both naval and merchant shipping and, with the co-

operation of Congress, procured, in mid-year 1936 passage of a new merchant marine act, none of the immediately preceding four Presidents of the United States took more than a perfunctory interest. Small wonder that Mr. Kennedy, when testifying before the House Appropriations Committee at hearings on the Third Deficiency Bill, characterized the condition of the merchant marine of the United States as "doleful."

Aside from a lack of marked progress in its material and operating record, 1937 may be said to have been a revealing year in the experience of those more or less directly associated with the American merchant marine and who are interested in its progressive upbuilding and continued welfare. The Act establishing and prescribing the functions of the Commission was long overdue, and its chosen personnel, particularly its chairman, Joseph P. Kennedy, has for the first time in over a score of years been befittingly qualified to solve the problems basic and incidental to merchant marine establishment, maintenance, and competitive operation.

Indicative of the "sickly" and "doleful" condition of the merchant marine, one has but to quote Chairman Kennedy's assertion that "any remedy to be effective must be a compound of many ingredients." Naturally, the ills of shipping permeate every phase and sphere of the industry—shipbuilding, shipowning, ship operation and ship equipment production. It is further revealed in the supplementary statement to the special report to Congress that the objectives of the Merchant Marine Act of 1936 would be more likely of attainment if certain changes were made.

Concerning these, the Commission recommends that the contractor be given protection against cancellation of subsidies without just cause; that the down payment required on new construction be changed from 25 per cent of the domestic cost to 25 per cent of the foreign cost; that the sales price to the purchaser include interest during construction upon that portion of the Commission's payments which represent the foreign cost of the vessel; that where the construction differential is more than 50 per cent, operators be permitted to build abroad; that the provisions for the recapture of profits be based on a ten-year instead of a five-year period; that provision be made for permitting the contractor to increase his reserves; that the Commission's power to relax the restrictions relative to subsidiaries and foreign-flag affiliations be enlarged; that the Commission be given power to waive the $25,000 limitation when such waiver would be in the public interest; and that the language of the Act be clarified in a number of instances to facilitate administration. On Nov. 29, a bill to amend the Merchant Marine Act of 1936, embracing the foregoing, was introduced in the House by Representative Bland, chairman of the Merchant Marine and Fisheries Committee. A similar bill was introduced in the Senate by Senator Copeland. The House Bill included a further amendment giving the Commission jurisdiction over transoceanic air services, and authorized subsidies to ship lines for the building up and development of that type of transportation. The American Export Lines, owners and operators of 18 steamships—passenger and freight—trading to Mediterranean and Black Sea ports, embracing 14 countries, plan to operate a flying boat line parelleling its present ship services.

HANDICAP OF OLD AND SLOW SHIPS

It should not, however, be too hastily inferred that our merchant marine through 1937 failed to function to the limit of its competitive fitness and capacity. The trouble lies deeper. Most of our ships are so old that, on the basis of a twenty-year life, 85 per cent will be ready for retirement within five years and, from the maintenance cost and speed points of view and therefore from the angle of real competitive fitness, the greater part of the shipping is already due for retirement. Even if

buttressed with the most liberal subsidies, the old ships are quite unable to overcome foreign competition. Again, new and faster vessels would be more economical of operation, would attract more and better paying cargo, less Government aid would be sought, national prestige would be enhanced and national defense strengthened. Concurrently, national trade and income could not fail to register increases well beyond the respective totals now being gathered.

Until 1937 year end, we struggled through the elapsed 12 months as best we could with a steadily deteriorating merchant fleet, being credited with only 7 per cent of world tonnage in international trade instead of the normal 14 per cent. Again, less than 35 per cent of outbound foreign commerce was carried in vessels of United States ownership, this contrasting sharply with the 61 per cent of British commerce in British bottoms, and 75 per cent of Japan's water-borne commerce in that country's own merchantmen. About 25 per cent represented our share of transatlantic passenger transportation.

According to the Commission, of six principal maritime nations, the United States now ranks fourth in tonnage, fifth in ships with a speed of 12 knots or over, and sixth in ships 10 years of age or under. It had been known for a long time that the merchant fleet needed new ships and needed them badly to save it from extinction, yet if they are to be built, the Maritime Commission insists that private capital as well as the Government must take a hand in the enterprise.

MARITIME COMMISSION ACTIVITIES

On March 9, President Roosevelt named Joseph P. Kennedy of New York City as chairman of the permanent United States Maritime Commission. At the same time, four other members were designated to serve a varying tenure of office. Previous to these nominations, the Commission had been functioning on a more or less temporary basis. Colleagues of Mr. Kennedy named for the reconstituted administration were Thomas M. Woodward of Pennsylvania, for the remainder of the term of Montgomery M. Taylor, ending Sept. 26, 1939; Rear Admiral Henry A. Wiley, U.S.N., retired, for the remainder of the term of his original appointment in 1936, ending Sept. 26, 1940; Edward C. Moran Jr. of Maine, for a five-year period; and Rear Admiral Emory S. Land, U.S.N., retired, for a six-year period. The temporary commission had functioned for almost nine months. Later in March, all five appointments were confirmed.

In the nine months since assuming office, the commissioners have rendered service to the cause of American shipping unprecedented alike in scope and value. All the way through its economic survey of the merchant shipping position, the Commission is seen to have approached a many-sided problem with consummate skill and with an open mind, and to have garnered the available facts and presented them frankly and fearlessly.

Acute as is the ship replacement problem, the labor problem was found to be no less acute. Conditions on board American ships are characterized as disgraceful and the labor attitude of the seagoing personnel as deplorable. The Commission opines that unless something is done to reduce inter-union friction, to increase the efficiency of vessel crews and to restore discipline on board ship, all Government effort to develop a sturdy American merchant fleet will be futile. Labor relations in the shipping industry have long suffered from the lack of an enlightened approach on the part of both employer and employee. The Commission finds that the employer has fostered long hours, low wages and cramped quarters; on the other hand, the employee has abused his occupation in a manner that would not be tolerated in any other industry. The Commission recommends establishment of a mediation board similar to that provided in the Railway Labor Act.

Strikes and inter-union friction were

prevalent throughout the year. A Pacific Coast strike which began Nov. 1, 1936 and ended about Feb. 15, 1937, is believed to have been responsible for a loss of $2,000,000 in Panama Canal tolls. Losses sustained by shipping operators were, of course, correspondingly heavy. To the end that plans be discussed for an agreement covering all basic labor questions, the American Steamship Owners Association on Nov. 23 called a conference of owners and unions of unlicensed personnel.

Tentative plans of the Commission call for 95 ships at a cost of approximately $256,440,000, the number and type of vessel embracing 46 cargo carriers, C-1; 14 cargo carriers C-2; 10 passenger and cargo carriers P-1; 10 passenger and cargo carriers P-2; four passenger and cargo carriers P-4; one special "Manhattan" type ship already ordered, and 10 tankers. Shipways in sufficient number are readily available in the United States for laying down the foregoing without expanding existing plants. The program contemplates orderly construction over a period of eighteen months to three years. The Commission stresses the fact that it does not intend to grant long-term operating subsidies to vessel owners who are not financially responsible, nor does it intend to build a lot of new ships only to see them tied up by internal dissension. The inevitable result, according to Chairman Kennedy, "would be another ghost fleet rotting in another ship cemetery." He indicated that we have three of these cemetery fleets now.

On Nov. 29, the Commission announced, as a stimulus to new construction, that it would make no further sales of surplus vessels in its laid-up fleet of world war origin. The fleet at date comprised 113 ships which will be held in reserve indefinitely for possible use in a commercial or military emergency. Since July, the Commission has hold under competitive bidding 75 surplus vessels aggregating 613,726 tons, realizing $3,903,976.93, an average of $6.36 per deadweight ton. Sixty-seven of these ships, classified by a special board as obsolete for commercial or military purposes, were sold on an "as is, where is" basis, either for scrapping or under conditions which prohibit their operation to or from any port in the United States for ten years. Of the remaining eight vessels, four were sold under terms which obligated the buyers to convert them into tankers; two for conversion into coastwise colliers, and two for operation solely in the United States. The reserve fleet now comprises four obsolete passenger ships, two cargo carriers laid up at Lake Union, Seattle, Wash., which may be disposed of in due course, and 107 steel cargo carriers concentrated in two units, one in the James River off Fort Eustis, Va., and the other in the Mississippi at New Orleans. On Dec. 10, contract for sale of the *Leviathan* by the United States Lines to British interests for scrapping, was approved by the Maritime Commission which holds a mortgage of $2,244,712 against the *Leviathan* and nine other vessels of the seller's fleet. The buyers were Metal Industries Ltd. of Glasgow, Scotland, and Thomas Ward Ltd. of Sheffield, England. Proceeds of the sale amounting to $732,000 will be applied to mortgage reduction.

The Commission, in its study of the labor problem, has gone carefully into the matter of sea-training of ship personnel. A plan has been suggested which provides for the training of 500 young men a year under the supervision of the United States Coast Guard. It is proposed to set up a shore base on Hoffman and Swinburne Islands in New York harbor. Students, of American citizenship, would be recruited by the Coast Guard from all sections of the country and would enlist for one year, during which the training would cover approximately three months at the shore training station, six months on a training merchant ship, and three months on a cruising cutter of the Coast Guard.

NEW LINER OF UNITED STATES LINES

Notable among the vessels contributing to the more or less normal

upbuilding of our merchant marine during 1937 was that of a twin screw, combination mail, passenger and cargo liner to replace the *Leviathan* in the North Atlantic service of the United States Lines. Known as the Maritime Commission (MC) design, plans and specifications for the new vessel were drawn after weeks of consultation between technical experts of the Commission, private architects and engineers, different shipbuilders in a position to build such a ship, the American Bureau of Shipping, and the technical advisers and officials of the United States Lines which will operate the vessel. The new liner of 34,000 tons displacement at load draft has been designated a model of modern ship construction, conforming not only to the latest safety and fireproof standards but with respect also to the unsurpassed accommodations provided for both passengers and crew, whose respective totals are set at 1,200 and 630 persons. The new liner will be slightly larger than the *Manhattan* and *Washington,* its companions when commissioned for North Atlantic service. It will be 723 feet long, 92 feet beam, and 75 feet deep to promenade deck. A sea speed of 22 knots is anticipated. All of the latest safety devices have been incorporated in the design, in addition to which, construction throughout will embody fire-resisting materials in accordance with the recommendations contained in a Senate Safety at Sea Report which emerged as a result of the investigation of the *Mohawk* and *Morro Castle* disasters. A three-compartment stability standard has been set, its less technical implication being that any three compartments throughout the length of the hull may be flooded as the sequel to an accident without unduly endangering the vessel's otherwise fitness to remain afloat. Lifeboat facilities provide a seat for each passenger and crew member. Most of the lifeboats will be motor propelled and radio equipped to conform with the latest requirements of the Bureau of Marine Inspection and Navigation. Modern and larger accommodations for the crew include a recreation deck.

Passengers of three classes are cited in the accommodations specified. From the promenade deck which may be completely enclosed during inclement weather, there will be accessible to cabin class passengers a smoking room foyer, lounge, library, dining room, writing room, gallery, cocktail foyer, reception room and a large ball room. A large all-the-year utility swimming pool rounds out the leading conveniences that contribute to creature comfort on board ship. Public rooms and recreation space for the tourist class are provided on the decks immediately below the promenade deck and consist of a large lounge, dining room, writing room, children's play room and smoking room. Third class passengers will have a covered promenade available for use under all weather conditions, a smoking room, lounge and dining room. In designing the cargo space, ample provision has been planned for the stowage of passenger automobiles.

The new liner is being built under the construction differential subsidy provisions of Title V of the Merchant Marine Act. Bids for the new vessel were opened by the Commission on Sept. 15. Of the three received, the New York Shipbuilding Corporation of Camden, N.J. and the Bethlehem Shipbuilding Corporation of New York City submitted bids of $19,491,000 and $20,705,000 respectively for construction of the ship on an adjusted price basis as compared with the like bid of $15,750,000 by the Newport News Shipbuilding and Dry Dock Company of Newport News, Va. The adjusted price basis permits settlement of the final cost of the vessel relative to changes in the cost of labor and materials which may occur during construction, providing any resultant increase or decrease does not exceed 15 per cent. On a fixed price basis, the respective bids were $21,308,000, $21,947,000, and $17,500,000. The contract of construction with the Newport News Shipbuilding and Dry Dock Company was signed Oct. 22, its bid of $15,750,000 on an adjusted price basis having been approved by the Commission on Sept. 30. The Commission announced that under

the provisions of the Merchant Marine Act it had agreed to sell the vessel to the United States Lines at the Commission's estimate of the cost of construction in a foreign shipyard, and that the foreign cost of construction covered in the builder's contract had been determined at $10,500,000, or two-thirds of the base bid of $15,750,000, making the construction-differential subsidy a matter of 33⅓ per cent. In accordance with the Merchant Marine Act, the United States Lines, as construction progresses, must pay to the Commission 25 per cent of the vessel cost, with the balance payable over a period of 20 years. Under the contract, the new liner must be completed within 852 days from Oct. 22, 1937.

OTHER SHIP CONSTRUCTION

Aside from tankers, the only other vessels in the category of additions to our merchant fleet as replacements of the cargo-passenger type were those awarded for construction to the Fore River yard of the Bethlehem Shipbuilding Corporation, Quincy, Mass., by the Panama Railroad Steamship Company, which is owned by the Federal Government. The award consisted of three modern, fireproof steamships to cost $4,040,000 each. The plans and specifications were prepared by George G. Sharp, naval architect of New York City, and approved by the Department of Commerce and the Navy Department. They provide for ships of the following specifications: Length, 486 feet; beam, 64 feet; molded depth, 38 feet 6 inches; deadweight, 6,000 tons inclusive of 100,000 cubic feet of refrigerator space; 72 staterooms; speed, 16½ knots when loaded to deep draft and using only 75 per cent of the available power. Delivery of the first of the vessels is planned for November 1938.

On March 3, Pusey & Jones Corporation announced that it had received a contract from the Philadelphia and Norfolk Steamship Co. for two 4,200-ton freighters to be built at their Wilmington, Del. yard. The new vessels will be operated between Philadelphia and Norfolk by way of the Chesapeake and Delaware Canal.

Additions to and maintenance of the merchant marine in recent years have for the most part been restricted to vessels in the tanker category, so much so that *Lloyds Register of Shipping* in its latest available quarterly statement, that of Sept. 30, 1937, placed the United States at the head of all other countries of the world, tankers then under construction being logged at 147,788 gross tons. The world's largest welded ship and the first American-built turbo-electric tanker, the *J. W. Van Dyke*, was launched Nov. 20 from the Sun Shipbuilding Company yard at Chester, Pa. Owned by the Atlantic Refining Company, this unique vessel of its type is 541 feet 5 inches long, 70 feet beam, 40 feet molded depth, 29 feet 6 inches draft, and has a cargo capacity of 6,552,000 gallons. The pumping equipment installed will make possible the discharge of cargo at the rate of 630,000 gallons an hour. A speed of 13½ knots will be maintained in service.

A round dozen or more tankers left the ways during 1937 to bolster up that department at least of the American marine industry. On Dec. 1, 13 tankers of 7,600 tons and three of 11,400 tons each were under construction, thereby appearing to confirm our already-credited leadership in tanker type craft. On the same date, four big ore carriers were under construction, two by the American Shipbuilding Co. at Lorain, O. and two by the Great Lakes Engineering Works at Ecorse, Mich. These new vessels, ordered by the Pittsburgh Steamship Co., a United States Steel Corporation subsidiary, represent the first large vessel construction on the Great Lakes since the depression began.

The American Bureau of Shipping, in its monthly review of ship construction activities as of Dec. 1, showed American yards to have on hand 117 vessels of 309,200 gross tons. These in the aggregate consist of barges, towboats, trawlers, ferry and fire boats aside from the others already featured.

THE NEW CUNARDERS

It goes without saying that among the many additions being made to the merchant fleets of other maritime nations, by far the most notable are the two Cunarders—*King George V* and the new *Mauretania,* building respectively at Clydebank, Scotland, and Birkenhead, England. The first-named vessel will have an over-all length of 1,032 feet or 12 feet more than the *Queen Mary,* but the beam of the latter at 118 feet will do service for the new unit. Gross tonnage of the *King George V* is expected to range around the 83,000 mark, or rather more than 2,000 tons greater than the *Queen Mary.* Propulsion equipment is understood to call for 180,000 horsepower and a sea speed of around 30 knots. Launching is expected toward the latter part of 1938 and commissioning in the early spring of 1940.

The keel of the new *Mauretania* was laid in the spring of 1937, but by the year end the vessel had assumed such shape as to warrant expectation of its launching in July, 1938 and commissioning in the spring of 1939. It is not intended to use the new liner for attempts at record-breaking; rather will it be equipped to maintain an average speed of 22 knots in round-trip services in conjunction with the *Georgic* and *Britannic* and make possible its filling, if need be, gaps in the express service caused by periodic overhauls to the *Queen Mary* and *King George V.* The vessel will have only two stacks and a cruiser stern, thus differing in both respects from its predecessor. Boasting ten decks and accommodations for three classes of passengers, a length of 750 feet and 33,000 gross tons, it may be assumed that the new ship will become no less popular than was the old *Mauretania.*

TONNAGE VOLUME OF WORLD MERCHANT SHIPPING

Progressive increases marked the year's production of merchant vessels throughout the world. The figures available cover only the first three quarters of the period, and are given by *Lloyds Register of Shipping* as 200,000, 430,000, and 19,000 gross tons, respectively. On June 30, the merchant marine aggregate of all countries reached 66,286,024 gross tons, indicating a gain during the elapsed 12 months of no less than 1,222,381 gross tons. In the same period, steam tonnage decreased by 191,559 tons, as did that of sailing vessels and non-propelling craft to the extent of 44,174 tons. On the other hand, motorships registered an increase of no less than 1,458,114 tons. Of decreases recorded, those by France, Spain and the United States were the most notable, revealing in the order cited, losses of 132,206, 102,655, and 100,275 gross tons. Sea-going tonnage represented the nature of the United States decrease, a circumstance all the more remarkable in view of our impressive tanker output.

A comparison of steam and motor tonnage owned throughout the world on June 30, 1937, as recorded in the 1937–1938 edition of *Lloyds Register,* credits the United States with 9,347,000 gross tons of sea adaptation and 2,441,000 gross tons of Great Lakes and inland waterways qualification. Relatively, 17,436,000 tons are credited to Great Britain and Ireland; 2,962,000 tons to the British Dominions; 4,475,000 tons to Japan; 3,928,000 to Germany; 2,844,000 to France; 3,174,000 to Italy; 4,347,000 to Norway; 2,631,000 to Holland; 1,855,000 to Greece; 1,118,000 to Denmark; 1,494,000 to Sweden, and 1,044,000 to Spain. Owing to the difficulty experienced in obtaining precise information in the case of Soviet Russia, Lloyds express the opinion that figures from there may not be comprehensive.

In a report issued by the British Chamber of Shipping on Feb. 23, 1937, the year 1936 was designated as one of continued expansion in the home market and of progress toward recovery in world trade, the quantum of the latter having increased by about 15 per cent and the sea-going tonnage of the world having decreased by about 7 per cent. Adjustment of the supply of freighter tonnage to demand has been one of the principal factors in restoring the

open freight market, but much still remains to be done in the direction indicated. The report further stated that the problem of 3,500,000 tons of laid-up shipping remained to be solved although it was probable that much of it would never go to sea again. According to the annual report of *Lloyds Register of Shipping*, the demand of maritime countries for additional tonnage due to increased volume of freight moving in world markets has resulted in the recommissioning of many vessels and increasing the value of those available. The existing world-wide demand for tonnage is due in part at least to the requirements of two wars being waged and the preparations being made in various other countries for possible future wars.

At the same time, there exists a welcome expansion in overseas international trade. The liner phase of shipping has shared, too, in the rising prosperity but perhaps more by reason of the disappearance of surplus tonnage than by improved freight rates. Reports of shippers indicate that cargoes from the United States to Japan greatly exceed those moving from the East, and give evidence that the experience will be of indefinite duration. Vessels engaged in the South and East African trades from and to the United States have been reporting capacity cargoes in both directions and meeting as best they could rush movements for passenger accommodations. The freight improvement between the United States and the continent of Europe has been more marked than that relating to the United Kingdom, due largely to the delay or backwardness of the continent in reaching its current peak. British merchandise has been moving in substantial volume for several years. Freight rates on commerce moving westbound between the United Kingdom and the United States will be increased 10 per cent on Jan. 1, 1938, according to an announcement of Oct. 8, 1937. Rates in this trade were increased 10 per cent in July on freight carried at $12.50 or less a ton and five per cent on freight of higher tariff. Rates on freight to the Far East also have been increased 10 per cent, while lines operating between Europe and the United States were considering increases for west-bound traffic. Indications at the year end pointed to the probability that freight and passenger traffic during 1937 would be the largest recorded since 1929.

INVESTMENT OUTLOOK FOR AMERICAN SHIPPING

According to the Maritime Commission survey, American shipping as far as the American public is concerned, never has been able to demonstrate without more or less ambiguity its claim to be rated as a social and economic factor. Construction and operation of a merchant marine does not follow economic needs closely. Primarily, adequate shipping facilities are of military importance to any country. The movement of imports and exports in one's own ships makes for independence in wartime; not only so, a worthwhile merchant marine is considered essential in spheres of troop transport and naval auxiliaries. For these reasons, the nations of the world have generally considered their merchant fleets as a national problem; consequently, subsidies for construction and operation of merchant vessels are the rule in most maritime countries. A weakness of the American merchant marine and one which seems unlikely to be remedied is the hesitancy of private capital to participate in its promotion and maintenance. Inescapable therefore seems to be the conclusion that no considerable amount of new money may be expected for the subsidized lines from outside sources. The Maritime Commission survey opines that whatever money is forthcoming probably will come from the so-called "insiders" who have an investment to safeguard and who may have an interest in some related industry benefited by the maintenance of some ship line in operation.

The subsidized American merchant marine embraces 155 vessels aggregating 1,032,379 gross tons. Current misconceptions about the stature of this

fleet are paralleled by a misleading notion regarding the amount of foreign commerce carried. To keep the record straight, subsidized vessels in 1936 carried but 16.6 per cent of our total dry-cargo business. Analysis of the financial condition of the subsidized lines in view of their replacement needs reveals, according to the Commission's survey, a truly depressing outlook for that section of the shipping industry. Under present circumstances, many of the lines cannot look forward to successful operation. Some lines apparently cannot survive even with maximum subsidies allowable under the law. Consolidations, mergers and eliminations, have already been effected. Of the 31 mail contract lines, seven have disappeared. Two lines engaged in the intercoastal trade, which formerly received mail subsidies, are contemplating the discontinuance of operations. The status of four lines with foreign flag affiliations is uncertain. Two lines covering important routes must reorganize, merge or recapitalize before they become eligible to receive subsidies. Seven lines have peculiar and difficult problems requiring special study. This leaves but nine concerns reasonably certain of continuing under the new subsidy program. In addition to the foregoing, there are seven services operated by private concerns for account of the Federal Government. Seventeen-year-old vessels of 10 knots speed are operated. The earning record of these lines indicates that some of them may also have to be merged or consolidated.

BUILDING PROSPECTS FOR SUBSIDIZED LINES

In its economic survey, the Maritime Commission, when discussing the replacement of over-age vessels by subsidized lines, ventured to express in somewhat greater detail the status of the nine lines "reasonably assured of continuing existence under the Merchant Marine Act of 1936." Three of them are not meantime in need of new ships. On the other hand, the remaining six will require about 66 ships to replace those existing and to provide for anticipated expansion. They have given written assurance to the Commission that they are prepared to embark upon a construction program involving the replacement of 60 of the 66 units within a period of five years. The plans, however, are predicated upon a reduction of the downpayment requirement for new vessels from 25 per cent of the American cost to 25 per cent of the foreign cost, upon a minimum construction subsidy of 40 per cent, and upon the granting of "satisfactory" operating subsidies. In addition, the plans are known to depend to a considerable degree upon business conditions and a solution of the labor problem. The Commission feels compelled to point out that such plans, even though put forward in good faith, are in themselves no guarantee of final realization. Too many factors are involved, some of them unpredictable, to make the contemplated construction program other than an expressed intention.

The Commission believes it safe to assume that the majority of our subsidized services would disappear if Government support were withdrawn. It feels, however, that private ownership should be given every opportunity to succeed; besides, the Merchant Marine Act of 1936 prescribes private operation "in-so-far as practicable." It is recognized, nevertheless, that public ownership may eventuate as a result of the inability of some private lines to finance needed replacements. Regarding the probable cost of an American merchant marine, the Commission has been forced to conclude that nothing more than the roughest sort of estimate can be given at this juncture. It appears, however, that the total subsidy—construction and operating—required by the 10 or 12 lines which offer some certainty of survival out of the 31 formerly sustained by mail contracts, will aggregate some $25,000,000 or $30,000,000 a year. If the lines are unable to make needed replacements and the Government is forced into an extensive construction program, the amount will, of course, be substantially increased.

PHASES OF THE PROFITANGLE

American shipping operations during 1937 indicated a somewhat less profitable outcome than 1936, according to a survey by the Standard Statistics Co., Inc. Notwithstanding an increased volume of business transacted, operating costs also increased, higher wages of crew personnel constituting the chief factor in the less satisfactory situation. Gross revenues of most lines have shown sizable gains, these reflecting expanded freight and passenger traffic and rate increases. Unless political developments interfere, such as invocation of the Neutrality Act, or effective blockades in war zones, continued heavy freight traffic is expected to prevail for another year or two at least. Prospective substantial advances in freight and passenger rates should benefit 1938 shipping operation. Intercoastal and Great Lakes shipping operation expanded materially in 1937. On March 16, all ship operators on the Great Lakes announced higher rates for the 1937 season.

Figures compiled by the Atlantic Passenger Conference show that 316,082 persons were carried by transatlantic ships in the first six months of 1937, the heaviest volume being reported from the ports of the United States in the North Atlantic crossing. The gain over 1936 was approximately 22 per cent for the same period. Cruise traffic during the season which starts early in October, reaches its peak in December, January and February and continues until mid-April, gave promise of reaching new high levels in the closing weeks of 1937. A survey by Thomas Cook & Sons showed that 122 special cruises would start from the port of New York during the season and range in duration from four to 32 days. These are exclusive of five cruises to the Mediterranean that ranged from 26 to 40 days; five cruises around the world that ranged from 90 to 142 days, and three cruises around South America that ranged from 47 to 61 days. Judged by the foregoing, cruise schedules of some transatlantic lines were likely to be almost as heavy as their regular services at the height of the summer season.

COMMERCIAL AVIATION

By Andrew F. Haiduck

Bellanca Aircraft Corporation

GENERAL

Increased activity in all phases of commercial aviation was the order of the day for 1937. Scheduled air lines showed substantial gains in operations reflected in greater mileage flown and more passengers, mail and express carried. In September alone the 17 air lines carried 130,269 passengers and flew 6,213,632 miles and 54,229,561 passenger miles. For the same period these lines carried 720,479 pounds of express. This has led to the placement of substantial orders for additional airplanes of comparatively immense proportions. T.W.A. (Transcontinental Western Airlines) during the year increased its original order for six mammoth 33 passenger four-engined Boeings to eight, after all records for passenger, mail and express were broken in September.

Aircraft production, stimulated by orders from the air lines and individuals, also showed substantial increase. The value of commercial airplanes sold in the first six months was approximately 80 per cent greater than the value of those sold in the same period in 1936. Greatest production was achieved in the two-place cabin planes selling from $1270 to $1500. Maximum production of this type reached the hitherto unheard of rate of 29 per week.

Scheduled transatlantic operations by three nations served to further accentuate the rapid strides made in this form of transportation. The development of the giant seaplanes used

in these operations was climaxed by Pan American Airways request for bids for a fleet of huge planes each capable of carrying 100 passengers over a non-stop run of 5,000 miles. The speed and range would place continental Europe within 14 or 15 hours of New York.

The unsettled international situation has directly and indirectly aided domestic aircraft manufacture, both for export and for our Army and Naval Air Forces. Under the stimulation of the current armament race the art of aircraft design and construction has advanced at a tremendous rate. All the ingenuity of the entire industry has been devoted to obtaining faster and more deadly fighting machines. The knowledge gained in this pursuit has been applied to the design of commercial craft of greater efficiency. In addition intensive production is rapidly evolving methods, machines and personnel for the continued growth of commercial aviation.

SCHEDULED AIR TRANSPORTATION

Mileage.—Scheduled air lines of the United States continued to gain in miles flown during the first six-month period in 1937. The 36,640,152 miles flown was approximately ten per cent more than the total for the same period in 1936. Of the 51,994 flights scheduled 47,544 were started. There were 1,061 extra sections flown and the total number of trips completed was 46,010. Of the trips scheduled the air lines started 89.61 per cent; of all trips scheduled plus extra sections 86.72 per cent were completed. Of trips started 94.66 per cent were completed. The daily scheduled mileage for both domestic and foreign lines operated by American operators was 212,582 miles, of which 193,284 miles was within the United States. The total mileage of American operated air transport routes was 63,051 miles on Nov. 1, 1937. Of the total 31,087 was domestic mileage.

Passengers.—Passenger traffic for the first six months was approximately 15% greater than that for the same period in 1936. The total number of passengers carried on American operated domestic and foreign lines was 553,314 and passenger miles amounted to 241,678,444, an increase of 18 per cent. On the domestic lines only 464,068 passengers were carried. Operation statistics for the months of July, August and September indicated that the percentage increase in passenger traffic for the entire year would be greater than those given above for the six-month period. The 17 scheduled air lines operating in continental United States in September, 1937, carried 130,296 passengers, and flew 6,213,632 miles and 54,229,561 passenger miles. Comparisons with September 1936, are shown in the following table:

	July, 1937	August, 1937	September, 1937	September, 1936
Companies operating	19	17	17	22
Companies reporting	19	17	17	22
Passengers carried	120,571	123,550	130,296	101,239
Express carried (pounds)	611,562	618,113	720,479	652,930
Express pound-miles flown	353,318,380	352,586,526	437,292,739	330,229,741
Miles flown	6,239,068	6,312,271	6,213,632	5,756,363
Passenger-miles flown	50,798,434	51,941,842	54,229,561	43,509,531
Passenger-seat-miles-flown	79,140,962	83,184,035	83,212,544	61,774,862
Percent used—seats—(percent)	64.19	62.44	65.17	70.43

Air Mail.—Air mail poundage has steadily increased since 1926 when 800,000 pounds were carried. For the first six months of 1937 domestic air lines and their foreign extensions transported a total of 10,196,108 pounds. The advantages of air mail have been so numerous that it is almost standard business practice to use this rapid service to

SUMMARY OF SCHEDULED AIR LINE OPERATION

	Domestic January–June 1936	July–December 1936	January–June 1937
Miles flown	29,078,403	34,698,823	31,266,908
Passengers carried	421,519	599,412	464,068
Passenger-miles flown	179,503,354	256,236,899	204,516,204
Passenger seat-miles flown	302,541,881	378,166,349	367,826,377
Express carried (pounds)	2,911,775	4,047,002	3,416,666
Express pound-miles flown	1,542,874,591	2,178,743,522	2,044,565,967
Mail carried (pounds)[1]	8,018,047	9,688,112	9,834,493
Mail pound-miles flown[1]	5,166,158,402	6,316,714,221	6,415,816,653
Mail payments[1]	$5,999,283.06	$6,434,647.64	$6,256,068.56
Foreign			
Miles flown	4,444,672	5,081,938	5,373,244
Passengers carried	62,193	64,845	89,246
Passenger-miles flown	24,998,270	31,005,530	37,162,240
Passenger seat-miles flown	—[2]	—[2]	—[2]
Express carried (pounds)	636,300	754,033	844,732
Express pound-miles flown	—[2]	—[2]	—[2]
Mail carried (pounds)	288,585	329,268	361,615
Mail pound-miles flown	—[2]	—[2]	—[2]
Mail payments	$3,350,154.34	$3,940,403.49	$3,928,548.19
Domestic and Foreign			
Miles flown	33,523,075	39,780,761	36,640,152
Passengers carried	483,712	664,257	553,314
Passenger-miles flown	204,501,624	287,242,429	241,678,444
Express carried (pounds)	3,548,075	4,801,935	4,261,398
Mail carried (pounds)[1]	8,306,632	10,017,380	10,196,108
Mail payments[1]	$9,349,437.40	$10,375,051.13	$10,184,616.75

[1] Hawaiian operations are included in these figures.
[2] Not available.

distant points. On July 1 there were 55,208 miles of mail airways and the daily average of flying miles scheduled for contract air mail was 180,367 carried on 70 domestic routes and 15 routes to Canada, the West Indies, Mexico, Central America, South America, and across the Pacific to Hawaii, the Philippines and China. Transpacific service has now been in operation for over a year on a regular weekly service.

Equipment and Personnel.—The air lines had 369 airplanes in service with a total passenger capacity of 4,796. The majority of the planes were twin engine transports such as Douglas DC–2's, DC–3's and Lockheeds. TWA, one representative operator, had 25 Douglas planes, eight combination sleepers with additional four engined equipment on order. The air lines employed 675 pilots, 656 co-pilots, 3,328 mechanics, 2,427 hangar and field personnel, 289 hostesses, 125 stewards, and 3,966 office employees giving employment to a grand total of 11,466 persons. The airlines which have hostesses on their planes include American Airlines, Braniff Airways, Grand Canyon Airlines, National Airlines System, Transcontinental and Western Air, United Air Lines and Western Air Express.

Fares.—On Jan. 1, 1937 the average passenger rate on domestic airlines was 5.6 cents per mile. On long trips this is actually cheaper than rail fare, since the reduction in time brings about savings in incidental expenses. One operator reduced round trip fares 15 per cent for the winter period when the load factor is small. (Load factor is the percentage of seats occupied.)

AIR EXPRESS

The fastest growing phase of scheduled air transportation's business is air express. Although the air lines still depend chiefly upon their air mail contracts and passenger business for revenue, the air express business has become important financially, and is continuing to expand at a rapid rate.

Transportation of express over the scheduled air lines began in the United States at about the time contract air-mail service started, the mail planes carrying also express, in some cases, in addition to passengers and letters. The volume of express moved in 1926 was 3,555 pounds. Development of air express in the beginning was not as rapid as that of air mail and passenger service, since the operators concentrated upon building up the two latter and regarded the carrying of express as a side issue, with one or two notable exceptions. Later, with the inauguration of systems for handling packages on the ground, the operators began to develop their air-express business, and in 1930 the amount of air express carried was 468,751 pounds. In 1936 it was 8,350,010 pounds. These figures do not include any privately carried express, but only that transported by scheduled air lines which offered this service to the general public. The total poundage of air express for the first six months of 1937 was 4,261,398.

Various plans for ground handling have been tried, but at present most of the air lines in the United States rely upon the railway express agency for pickup and delivery. Ordinarily packages are collected or delivered by the express agency vehicles on their regular routes, but when the route schedules of the trucks do not correspond with the time for the arrival or departure of airplanes, special vehicle trips are made, or the services of Western Union messengers are utilized. The express agency also has assumed responsibility for advertising, insurance, and solicitation of business, handling all details of the express service on the ground and simply turning the packages over to the air lines for transportation between cities.

Shipments for off-air-line cities are forwarded by air to the air-line city from which the best rail connections can be made to the destination city. In the same way, shipments originating at off-air-line cities are sent by rail to the place where best connections can be made with an air line. When traveling by rail, the air-express shipments are separated from the volume of rail-express shipments.

Advertising and printed matter, including electrotypes and matrices, comprise the largest classification in air express. Other types of shipments include valuable papers, news photographs, auto parts and tires, wearing apparel, securities and checks, newspapers, cut flowers and perishables, electric supplies, machine parts, phonograph records, cosmetics and drugs, silks and fabrics.

INSURANCE

Four national insurance companies have worked out a new low cost air travel passenger insurance at no greater cost per mile than surface transportation. The plan gives $5,000 coverage at a premium rate of only 25¢, compared with the previous rate of $1.00. The coast-to-coast flight insurance is $1.00 instead of $2.00 previously. The premium rate of 25¢ is based on scheduled flying time, which allows for stop-overs en route and is good for seven days from start of trip to termination. For example, a traveler under this policy may fly from New York to Chicago with a possible six-day stop-over in Buffalo, Cleveland, or Pittsburgh—and will be covered for the entire flight for 25¢. In case the passenger should interrupt any portion of his scheduled air line trip, the new Airline Trip Policy covers the passenger in trains and steamships between the given points specified in the policy, and in automobiles operated by the air lines to and from airports.

MISCELLANEOUS OPERATIONS

In spite of the rapid growth of scheduled air transportation, the miscellaneous operations of flying serv-

ices and individuals have continued to account for the greater part of the civil flying activity in the United States. This is true even though scheduled activities continued to expand during the depression, while many other types of flying were curtailed. Airplane-miles flown by civilian airmen other than scheduled air transport operators in the first six months of 1937 were 45,059,950, nearly 9,000,000 more than the miles flown by the air lines.

Under the heading "Miscellaneuos Operations" are included taxi and charter flying, student instruction, aerial surveying, and the many exhibition flying, photography and aerial surveying, and the many extraordinary tasks undertaken by pilots to meet emergencies that arise in all kinds of business and personal affairs. These activities are generally carried on by the fixed-base operators or flying services. Also in the miscellaneous operations category are air circuses and tours, experimental and test flights, and private flying for business or pleasure.

The number of passengers carried by miscellaneous operators in the first half of 1937 was 634,251. There are about 7,000 licensed planes used in activities other than scheduled operations, and the number of licensed pilots not employed by air lines is nearly 15,000.

AIRPORTS

On Nov. 1, 1937 there were 2,322 airports and landing fields in the United States distributed as follows:

Municipal airports	764
Commercial airports	431
Department of Commerce Intermediate fields	287
Army airdromes	61
Naval air stations (including Marine and Coast Guard)	26
State-operated fields	45
Marked auxiliary fields	607
Private fields	76
Fields for miscellaneous Government activities	25
Total	2,322

Air ports and landing fields having night lighting equipment were as follows:

Municipal	266
Commercial	96
Intermediate	281
Army	31
Navy	11
States	9
Auxiliary	10
Private	7
Total	711

AIRWAYS

A program of airways construction representing plans for expenditures of about $5,000,000 of the $7,037,800 which the Department of Commerce's appropriation act for the fiscal year 1938 authorizes for establishment of air-navigation aids was announced by the Bureau of Air Commerce. The act appropriated $3,037,800 for this purpose for the fiscal year 1938 and authorized the Department to obligate itself for an additional $2,000,000 prior to July 1, 1938, plus a further $2,000,000 prior to July 1, 1939.

The Bureau of Commerce's program was designed primarily to improve the existing system of air-navigation aids by modernizing present aids and providing new facilities to fill in gaps in the present system.

An outstanding feature was adoption for Bureau radio stations of simultaneous transmission of both voice and radio range signals on the same frequency, which has been made possible by the Bureau's development work. With simultaneous transmission the radio range signals transmitted to keep the pilot on his course are sent continuously. Voice broadcasts are made from time to time on the same frequency, with the range still in operation, and the pilot may listen to whichever form of transmission he requires at the moment.

As it is necessary that range signals and voice broadcasts be on the same frequency, stations operating on the older basis have to interrupt the range signals to broadcast voice. Although the intervals are brief, not exceeding three minutes, they may occur at times when pilots urgently need radio range guidance. Simultaneous transmission does away with these interruptions.

Service installation of ultra-high frequency transmitters, also de-

veloped by the Bureau, to furnish a positive indication of the location of radio range stations, is a major part of the program.

A further phase of the improvement plan provided for the equipment of all major radio stations with vertical radiator autennas which improve the transmission of directional signals to airmen and also are necessary for simultaneous transmission. In addition, several intermediate landing fields will be enlarged, improved, or relocated, and lights on sections of four airways will be relocated in order to provide straight line course.

AIRCRAFT PRODUCTION BY TYPES, JANUARY-JUNE, INCLUSIVE, 1937

Monoplanes:	
Open cockpit (landplanes):	
1-place	8
2-place	83[1]
3-place	1
Total open	92[2]
Cabin (landplanes):	
1-place	3
2-place	670[3]
3- to 7- place	179[4]
8- to 12-place	14[5]
16-place and over	24[6]
Total cabin	890
Total monoplanes	982
Biplanes:	
Open cockpit (landplanes):	
1-place	6
2-place	1
3-place	2
Total open	9
Cabin (landplanes):	
2-place	5
3- to 7- place	87[7]
Total cabin	92
Total biplanes	101
Total domestic civil aircraft	1,083
Military airplane deliveries	254
Airplanes exported	286
Grand total	1,623

[1] Includes 1 multimotor plane.
[2] Includes 1 flying boat and 8 convertible planes (open or cabin type).
[3] Includes 5 land or sea planes (convertible).
[4] Includes 9 multiengine craft.
[5] Includes 13 multiengine craft.
[6] All multiengine craft.
[7] Includes 1 land or seaplane (convertible).

AIRCRAFT PRODUCTION

Aircraft production in the United States in the first half of 1937 increased approximately 20 per cent over that for the same period in 1936. The total of all aircraft manufactured was 1,623. The major increase for any one category occurred in the number of two place cabin land monoplanes. Production in this class increased 50 per cent over the previous year. This type of plane has made flight possible for the person of average means, and several manufacturers were months behind in their deliveries during the late spring and summer months. One manufacturer in particular achieved a production of 29 per week. It is estimated that the total value of units produced for 1937 will be in the neighborhood of $100,000,000 an approximate increase of 40 per cent over 1936.

TRANSOCEANIC AIR TRANSPORT

Pan American.—Backed by a wealth of seaplane experience in the Caribbean and across the Pacific, Pan American completed all of its survey flights across the Atlantic in the summer of 1937. The flights were made with a minimum of fanfare and a maximum of efficiency. The big Sikorsky boat used flew first from New York to Newfoundland in seven hours and 22 minutes for the 1,070 miles. From Newfoundland the flight to England was made in 12 hours with effortless ease. With the conclusion of these pioneer flights across the Atlantic regular passenger service will probably be inaugurated sometime in 1938. In addition to the survey flights regular passenger service was established from Manhasset Bay in New York to Bermuda on a five and one-half hour schedule. The service is flown alternately by Pan American and Imperial Airways.

The climax to the year's transatlantic operations was Pan American's request for bids on a fleet of 100 passenger transports for use in 1940. With a gross weight of approximately 160,000 pounds and a payload of 25,000 pounds with a range of 5,000 miles, these planes will

be approximately twice as large as the Boeing Clippers now under construction for transatlantic passenger service in 1938. The manufacturers who received requests for bids were: Boeing Aircraft Corporation, Sikorsky Division of United Aircraft, Glenn L. Martin Company, Douglas Aircraft Company, Consolidated Aircraft Company, Lockheed Aircraft Corporation, Curtiss Wright Corporation, and North American Aircraft Corporation.

Imperial Airways.—The flights of the Short flying boats of Imperial Airways were made over the same routes as those covered by Pan American with apparently equal ease and efficiency. On the first flight the Clipper and the British boat *Caledonia* actually passed in mid ocean within 6 miles of each other.

Lufthansa.—The activities of the German Lufthansa were confined to the route *via* the Azores. Differing radically from the Sikorsky Clipper and the British Empire boats the German planes were twin float seaplanes launched by a catapult from a big mother ship. Weighing 17 tons, the German seaplanes gave a convincing demonstration of their unusual method of launching. The average speed made was 140 miles per hour. While this type of operation may be satisfactory for mail and express it does not appear likely that it would be satisfactory for passenger service.

RESEARCH

Aerodynamics.—Most of the aerodynamic research in the United States is conducted by the National Advisory Committee for Aeronautics at Langley Field in Virginia. Probably the most promising development was a new controllable nose slot cowl for radial engines. This improved cowling promises to increase still further the speed range of the airplane and still give adequate cooling on the ground and in the climb. The higher output of the new radial engines, particularly the twin row types, necessitates a more efficient cowl from the viewpoint of its ability to direct the cooling air to every part of the cylinder, particularly the heads. Preliminary tests of this cowl appear very promising. The amount of cooling required is controllable by the pilot under any conditions whereas the usual N.A.C.A. cowl now in general use usually gives excess cooling at high speed and almost marginal cooling in the slower speeds of takeoff and climb.

The continued search for methods of reducing drag resulted in some interesting and important research into the drag of rivet heads usually exposed in the usual methods of all metal construction. This situation was found to be extremely critical for the drag caused by rivet heads on the surface of a wing. For the clean airplanes of today this is especially important since the drag of the wing is approximately 50 per cent of the total drag. It was found that a hypothetical airplane with a speed of 225 miles per hour expended 182 horsepower more than that which would be required if the wing were free from lap joints and exposed rivet heads. Advantage has already been taken of this fact by several manufacturers in their new models which now have flush rivets and fewer lap joints.

Tricycle Landing Gear.—Research during the year has eliminated the shimmy from the foreward wheel of the tricycle type landing gear. The N.A.C.A. developed a new method of removing this objectionable feature by providing a certain amount of lateral freedom of the castering wheel. The tricycle arrangement will be incorporated in the new 40 passenger *DC–4* with several resultant advantages, chief of which is the removal of any danger of nose-over due to the sudden application of brakes. In addition better visibility is provided on the ground as well as a better attitude on the ground since the airplane is practically horizontal when at rest.

Blind Landing.—After two years of intensive research the Army Air Corps has developed an automatic landing control feature. The airplane is brought down to a definite altitude within the range of radio reception from the ground. The airplane does

not even necessarily have to be headed into the runway. Within 20 miles or less the airplane is entirely controlled automatically by radio in conjunction with an automatic pilot. Both the throttles and the controls are actuated by this device, and the airplane follows a curved path to the ground within very accurate limits. Landing gear switches connected to the throttle and brakes cause the engines to be idled and brakes applied after ground contact is made. The application of this system to air line operations would increase reliability still further.

Fuel Injection.—Considerable development work was done during the year with fuel injection. Fuel injection in a gasoline engine differs from the ordinary carburetion system in that gasoline is pumped individually to each cylinder. This method eliminates any possibility of a fuel system failure due to icing. The usual carburetor takes in air which is usually preheated in order to compensate for the temperature drop across the venturi. Under certain conditions the venturi would ice up if insufficient heat were supplied and atmospheric conditions were favorable to ice formation. Continued flight under such conditions would eventually choke the carburetor with subsequent stoppage of the engine. The fuel injection system, besides removing this hazard, has the additional advantage of eliminating considerable excess weight made necessary by the air preheat system necessary on the carburetor engine.

Snow Static.—Considerable research during the year led to the development of antennae and a static dissipator with resultant improvement in reception under extreme static conditions. Investigations revealed that the primary source of trouble was the accumulation of a static charge by the airplane with a subsequent discharge from the trailing edge of wings and tail surfaces. It was found that a fine wire trailing well back of the airplane would discharge the static and thus remove the disturbance away from an antenna mounted in the nose. This research made independently by most of the major air lines has been productive of more reliable radio reception under adverse conditions when the radio is needed most.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

MANUFACTURERS

American Assn. of Creamery Butter Manufacturers, 110 N. Franklin St., Chicago, Ill.

American Automobile Assn., Pennsylvania Ave. at 17th Street, Washington, D.C.

American Bottlers of Carbonated Beverages, 224 Southern Building, Washington, D.C.

American Brush Manufacturers Assn., 505 Arch St., Philadelphia, Pa.

American Hardware Manufacturers Assn., 342 Madison Ave., New York City.

American Institute of Steel Construction, 200 Madison Ave., New York City.

American Iron and Steel Institute, 350 Fifth Ave., New York City.

American Paper and Pulp Assn., 122 East 42nd St., New York City.

American Petroleum Institute, 50 West 50th St., New York City.

American Zinc Institute, Inc., 60 E. 42nd Street, New York City.

Mellon Institute of Industrial Research, University of Pittsburgh, Pittsburgh, Pa.

National American Wholesale Lumber Assn., 41 E. 42nd Street, New York City.

National Assn. of Cotton Manufacturers, 80 Federal Street, Boston, Mass.

National Assn., of Ice Industries, 228 N. La Salle Street, Chicago, Ill.

National Assn. of Manufacturers of the U.S. of America, 11 W. 42nd St., New York City.
National Assn. of Wool Manufacturers, 80 Federal Street, Boston, Mass.
National Automobile Chamber of Commerce, 366 Madison Ave., New York City.
National Electrical Contractors Assn., 420 Lexington Ave., New York City.
National Electrical Manufacturers Assn., 155 E. 44th Street, New York City.
National Federation of Textiles, 10 East 40th St., New York City.
National Lumber Manufacturers Assn., 1337 Connecticut Ave., Washington, D.C.
National Machine Tool Builders Assn., 1220 Guarantee Title Bldg., Cleveland, O.
National Metal Trades Assn., 444 Madison Ave., New York City.
Rubber Manufacturers Assn., 250 W. 57th St., New York City.
United States Brewers Assn., 21 East 40th St., New York City.
United Typothetae of America, Tower Building, 14th and K Sts., N.W., Washington, D.C.

TRANSPORTATION AND COMMUNICATION

Aerial League of America, 280 Madson Ave., New York City.
American Assn. of Railroad Superintendents, 111 Union Station, St. Louis, Mo.
American Railway Engineering Assn., 59 E. Van Buren St., Chicago, Ill.
American Road Builders Assn., 95 National Press Building, Washington, D.C.
American Steamship Owners Assn., 11 Broadway, New York City.
Associated Traffic Clubs of America, 917 Majestic Bldg., Indianapolis, Ind.
Association of American Railroads, Transportation Building, 17th and H Streets, Washington, D.C.
Cruft Labratory, Harvard University, Cambridge, Mass.
International Amateur Radio Union, 38 La Salle Road, West Hartford, Conn.
Maritime Assn. of the Port of New York, 80 Broad St., New York City.
National Aeronautic Assn., 1909 Massachusetts Ave., Washington, D.C.
National Council of American Importers and Traders, Inc., 45 E. 17th St., New York City.
National Highway Users Conference, National Press Building, Washington, D.C.
National Highways Assn., Boss River, Cape Cod, Mass.
National Industrial Traffic League, 1 La Salle Street Bldg., Chicago, Ill.
National Traffic Service Assn., 105 N. Moore St., New York City.
North American Export Grain Assn., Inc., 2 Broadway, New York City.
Railroad Owners Assn., 502 Chandler Building, Washington, D.C.
Railway Business Assn., 38 S. Dearborn St., Chicago, Ill.
United States Bureau of Standards, Washington, D.C.
United States Naval Research Laboratory, Washington, D.C.

PART FIVE

SOCIAL CONDITIONS AND AIMS

DIVISION XIV

IMMIGRATION AND POPULATION

RACE CONDITIONS IN THE UNITED STATES

By Harry H. Laughlin

Carnegie Institution of Washington

FACTORS IN TRENDS AND CHANGES

The outstanding subjects for consideration in any review of trends and causes of change in race conditions in the United States for the year 1937 run as follows:

(1) The slowing down of immigration into the United States and the increase of emigration from the nation.

(2) The consequent settling-down of the alien stocks in the United States, the "reality, strength and effect" of their efforts toward linguistic, social and racial assimilation, and their increasing parenthood of "future Americans."

(3) The northward and westward migration of the southern Negro to fill possible demands for "cheaper labor."

(4) The periodic northward migration of Mexican families into the Southwest during the harvest season, their return south at the end of harvest, and the efforts of the Southwest to limit and regulate this movement.

(5) The continued press of the anti-lynching bill in the Congress of the United States, and the equally vigilant and persistent filibuster by southern Representatives and Senators against this bill as an attempted invasion of the Federal Government into matters entirely within the function of state self-government.

(6) The building-up by the Mountain and Pacific States of resistance to further Oriental immigration, and the testing-out of American-born persons of Oriental racial-stocks as to their degree of social, economic and patriotic assimilation.

(7) The continued increase of inter-racial mixtures brought about by the increase of time during which "pairs of races" are, regardless of differences or resemblances in racial qualities, resident in the same region.

(8) The continued effort of the patriotic societies and the American Coalition, and of representatives of the older American stocks under the leadership in the Congress of Senator Robert R. Reynolds of North Carolina, in building-up still higher and sounder standards of racial similarity and inborn qualities, physical, mental and spiritual, for future immigration and for a more vigorous and efficient deportation policy.

(9) The equally active efforts on the part of forces which would abolish race as a basic element in settling immigration-standards, and who look upon the territory of the United States as a refuge for the oppressed of the Old World, to continue the present relatively low immigration-

standards, to legalize the status in the United States of past illegal entrants, and to place judgment in the hands of the Federal Executive in cases proposed for deportation on account of illegal entry, or, in cases of legal entry, on account of a subsequent violation of the laws of the United States or one of the several States, or of cases which become public charges or which prove or become unemployable.

(10) As this paper goes to press (January, 1938) the returns on the Federal Unemployment Census are just beginning to come in, and it is not yet known how the "unemployment of the current depression" is distributed among the several racial stocks and nativity-groups—among persons of Old American stocks and persons of each recent immigrant-stock; and among native-born citizens, recently naturalized citizens and aliens resident in the United States. Such an analysis, when possible, is expected to throw substantial light upon the facts which will influence the future immigrational, deportational and racial policies of the United States and of the several States.

(11) The undertaking of the Survey of the Human Resources of Connecticut by that commonwealth. The Commission which is charged with this survey is composed of Frederick C. Walcott, chairman; C. Charles Burlingame, Newton A. Brainard, Charles A. Moser, Nathan D. Prince and Mrs. Sydney G. Davidson. In this survey the Commission is seeking basically to determine the hereditary—physical, mental and spiritual—qualities of the present population of Connecticut, and to determine and to analyze those major factors which are now operating to influence trends in the inherent nature, numbers and distribution of the future population of this State.

PREPARATION FOR THE U. S. DECENNIAL CENSUS OF 1940

In the immediate future the Congress of the United States will provide for the sixteenth decennial census of the United States to be taken in 1940. While the Census Bureau has for many years been a permanent institution, still extraordinary provisions must, of course, be made for each of the nation-wide decennial censuses. With the taking of each recent census the subsequent work of the permanent Census Bureau has been increased, and the usefulness of the researches and services of this Bureau have grown correspondingly.

The one thing that stands out as most needed for the census of 1940 is the provision for converting the "Decennial Census" into a "Permanent Population-Registry." The plan, if adopted by Congress, would require the enumerator, when he records the required data about the individual who is "being counted," to enter such data on a card which, besides calling for the usual census-data, would provide additional entries particularly on race-descent, family-connections and personal identification. Such a "Card Index," if followed up and used by the several States, would constitute a permanent, active and up-to-date "Population-Registry" of the United States as a whole, and for each of the individual States and communities which might choose to collaborate with the Federal Government in the matter.

Many States now provide Vital Statistical Registration—the making of a permanent record, with certain medical and demographic data, of each birth and death which occurs within the specified region. It would be necessary only to open a similar record-card for each person—each immigrant—who moves into the given State, region or community, and for each person—each emigrant—who moves out of it. Thus, in its own files, starting with copies of the Federal Census Cards as the basic registry for the instant when the plan is placed in operation, the particular State would add a new card for each person who is born within or who moves into the particular region, and at the appropriate instant would remove from the Active Registry into the Dead File the card for each per-

son who moves out of the community or who dies within it. Thus the registry of the population would be always complete, up-to-date and active. It would protect all law-abiding persons, and would enable the law to apprehend more certainly and readily persons who violate the laws of any particular community. Each Federal Decennial Census of the future would check-up the accuracy of the population-registry as it modified the previous Decennial Census.

A PROPOSED CENSUS AND REGISTRY CARD

The accompanying figures show a registry card of the type which, if adopted, would supply the basic needs of a permanent, active and up-to-date Populational Registry as herein described. As a whole the plan would develop the Decennial Population Census, and the Vital Statistical Registries of the several States into such a registry.

Besides the items specifically listed on the proposed card, more specific data on a line to be added after "Occupation" might well be included, if such added entries covered the details of financial income of the particular subject-person, and listed also the number of persons wholly or partially dependent upon such person. Each future Decennial Census could be counted on to secure at first-hand the data which experience had proven to be most useful in a better understanding of the population-problems of the country.

PERSONAL IDENTIFICATION

Every satisfactory, permanent registry-system needs an entry for personal identification which is both "sound and feasible." Fingerprinting has been found, by experimental work in connection with the Connecticut Survey of Human Resources, to be a feasible method by which the enumerator with a little practice can readily secure the personal identification of each person enumerated. The prophesied resistance to fingerprinting failed to materialize, and a good field worker, backed by popular opinion and law, would have little difficulty in including personal identification in the census. Indeed an individual resistance to such identification would connote some ulterior reason for desiring to remain unidentified, while every person who is legally a resident of a community should, of course, prize the fact that he or she is personally identified. In the future it may be found that some photographic system can replace fingerprinting as the most feasible means of recording sure personal identification, in which case, in the future censuses such a method could be substituted. But it should first prove to be a great deal more satisfactory than the present quite satisfactory method of fingerprinting.

FAMILY STOCK

Besides providing for personal identification, any satisfactory "Population-Registry" requires card-entries on both kinship and race-descent. The proposed census-card provides for the name of the father and the name of the mother, as well as of the consorts and children. Such records would make it possible in the future to use the census-registry files, both active and dead, in working out, both accurately and readily, family trees and kinships of considerable extent. Practical use of such records is, of course, evident in the case of property inheritance. Also known kinship-connection is valuable as a matter of family history in the efforts of the people of each generation to build up their own family stocks in natural physical, mental and spiritual qualities.

RACIAL DESCENT

In this matter the proposed plan provides for the description of the race-descent of the father and separately for the mother, each by "one-quarter fractions." (See card.) Such records, by practice, have been found feasible, and "racial fractions by quarters" for the father and for the mother, provide for the description of the racial composition of the subject of the particular registry-card by "eighths." For this purpose the fol-

A PROPOSED CENSUS AND POPULATION REGISTRY CARD

1. PLACE OF ABODE: N.Y. (State) Bedford (County) Franklin (Township or City Div.) — (Name of Inc. Place)
IV (Ward of City) 142 State Ave. (Street, Avenue or Road) "Roadside" (Home or Farm Name)

File Ref. — — — — (Code: County Div. or City Ward)
— — — — (Accession No. of Co. Div. or City Ward)

2. NAME: BROWN (Surname) Arthur (Given Name) P (Middle Initial) 3. Male (Sex) 4. 1879 (Date of Birth: Year) June (Month) 17 (Day)

5. Indiana (Where Born: State or Country) Salem (Town or Locality) 6. Head (Relation to Head of Family) 7. Married (Single, Married, Widowed or Divorced) 8. White (Race or Color)

9. CITIZEN OF U.S.: Yes (Yes or No) 10. IF FOREIGN BORN: — (Year of Immigration) — (Port of Entry) — (Year Naturalized) — (Naturalization Pet. Yrs.) — (Formal Schooling)

12. ILLITERACY: (a) ENGLISH Yes (Spoken) Yes (Read) Yes (Written) (b) PRINCIPAL OTHER TONGUE: — (Language) — (Spoken) — (Read) — (Written) 13. No (Blind) 14. No (Deaf)

15. Unitarian (Religious Affiliation) 16. OCCUPATION: (a) Accountant (Kind of Work) (b) Banking (Kind of Business) (c) Employed (Employed or Working on own account)

17. LEFT COUNTRY: — (Year) — (Country Goes to) 18. DEATH: — (Year) — (Month) — (Day) — (Age) — (Place: State or Country) — (Town or Locality) — (Cause)

19. PERSONAL IDENTIFICATION: (Fingerprints or other definite identification) 20. IDEN. REF. NO. (Computed from Item 1?) —


Thumb Right Hand


Index Finger: Right Hand


Middle Finger: Right Hand


Fourth Finger: Right Hand


Little Finger: Right Hand

(Front of Card)

21. FATHER: Brown (Surname) James M. (Given Name and Middle Initial) Indiana (Where Born: State or Country) Springfield (Town or Locality)
¾ English (Racial Descent By Fractions) ¼ German ¤ — ¤ — (Identification Reference No.)

22. MOTHER: Murphy (Maiden Surname) Catherine M. (Given Name and Middle Initial) Indiana (Where Born: State or Country) Salem (Town or Locality)
¼ Irish (South) ¾ Scotch ¼ English ¤ — (Identification Reference No.)

23. CONSORTS AND CHILDREN:

(a) FIRST CONSORT: Young (Surname) Alice J. (Given Name and Middle Initial) — (Identification Reference Number)
1901 (Marriage: Year) June (Month) 24 (Day) — (Divorce: Year) — (Month) — (Day) 1912 (Death of Consort: Year) October (Month) 18 (Day)

CHILDREN: Sex	Given Name and Middle Initial	Year of Birth	Month	Day	Identification Reference No.
1 Male	Arthur B	1903	February	19	
2 Female	Mary C.	1905	April	27	
3 Male	Edward d.	1906	December	6	
4 Male	Harry	1909	July	20	
5 Female	Harriet	1909	July	20	
6					

(b) SECOND CONSORT: Johnson (Surname) Anna E. (Given Name and Middle Initial) — (Identification Reference Number)
1916 (Marriage: Year) March (Month) 14 (Day) — (Divorce: Year) — (Month) — (Day) — (Death of Consort: Year) — (Month) — (Day)

CHILDREN:				
1 Female	Elizabeth A.	1917	September	10
2 Female	Marie P	1920	March	23
3 Male	John C.	1921	October	30
4				
5				
6				

NOTES:
Record Entered: 1931 (Year) August (Month) 15 (Day) by: A. Baker (Name) — (Office) — (Dist No.) — (Dist Serial No.)

(Back of Card)

lowing list of racial stocks, and of nativity and citizenship classes, have been tried out successfully in field experiments:

Racial Stocks. Designate whether

1. Canadian
2. French Canadian
3. French
4. Australian (White)
5. Danish
6. Norwegian
7. Swedish
8. Icelandic
9. German
10. Holland (Dutch)
11. English
12. Scotch
13. Irish
14. Welsh
15. German Jew
16. Polish Jew
17. Russian Jew
18. Spanish
19. Span.-Amer. (Indian)
20. Span.-Amer. (White)
21. Mexican Indian
22. Mexican Spanish
23. Portuguese
24. Greek
25. North Italian
26. South Italian
27. Flemish
28. Lithuanian
29. Russian
30. Polish (Polack)
31. Bohemian
32. Moravian
33. Serbian
34. Croatian
35. Montenegrin
36. Slovak
37. Slovenian
38. Ruthenian
39. Dalmatian
40. Herzegovinian
41. Bosnian
42. Albanian
43. Armenian
44. Rumanian
45. Hindu
46. Gipsy
47. Arabian
48. Syrian
49. Finnish
50. Magyar (Hungarian)
51. Bulgarian
52. Turkish (Cossack, etc.)
53. Japanese
54. Chinese
55. Indo-Chinese
56. Pacific Islander (Haw.)
57. East Indian (Malay)
58. American Negro
59. West Indian Negro
60. American Indian
61. "Mountain White"
62. "American Yankee"
63. "American Southerner"
64. "Middle West American"
65. Other races

Nativity. Designate whether

Native born, both parents native born;

Native born, 1 parent native born, 1 parent foreign born;

Native born, both parents foreign born;

Foreign born; or

Nativity-status unknown.

Citizenship. Designate whether

A citizen of United States;

Not a citizen at time of Census; or

Citizenship-status unknown

THE CENSUS AND REGISTRY

The following points are listed in favor of making provision for the proposed "Census and Registry" in connection with the decennial census of 1940:

1. Ultimately, the *Population Census,* a complete *Population Registry,* and an improved *Vital Statistics Registration* should be co-ordinated into one simplified system.

2. This unified system would require only a little advance over the present situation, but it would require much more effective co-operation by the Federal and state Governments. By utilizing modern card-indexing, the simplified plan could be maintained with a less expenditure of time and money than required by several present unco-ordinated systems.

3. The accompanying copy is the draft of a proposed *Census Card* which would be the essential unit in this unified system.

4. One *Census Card* would be opened by the Vital Statistics authorities of the State for each birth within the State, and by the Federal Immigration authorities for each immigrant to the country.

5. The *Census Card* would be maintained by the State at the county seat of the county of residence of the individual described.

6. These *Census Cards* would be shifted from county seat to county seat on the removal of their owners to new counties of residence.

7. Each resident of the country, whether native born or immigrant, should be required to have one and only one legal residence.

8. The Federal Bureau of Census could use these cards as a basis for its decennial census taking.

9. On the death, or the emigration, of an owner of a card, his or her card would be closed, removed from the active file, and placed in a storage file permanently available for individual reference and demographic analysis.

10. These individual *Census Cards* would cover such matters as Name and Personal Identification; Place and Change of Residence; Citizenship, Literacy and Occupation; Tongue, Race, Religion; Birth, Parentage, Consorts and Children; and Death and Cause of Death.

11. The *Census Card* should provide for the most fundamental data on constitutional qualities—physical, mental and spiritual—and on biographical demographic, economic and social facts. It should be basic, brief and standardized over long periods of time.

12. A file of such *Census Cards* could be used to analyze movements in all essential phases of population-change. Also it would have many more uses. For example, it could be used to trace family connections and it would enable the country to measure racial trends among the several white racial stocks with great accuracy. We cannot do this with the present system; we can only trace trends by whites as a whole, blacks as a whole, and by nativity.

13. A file of such *Census Cards* maintained for living persons, and built up for former inhabitants by historical and genealogical research, would constitute an active record of tremendous value to the nation.

14. Such a file would provide needed facts for better future studies on race-conditions and trends of the United States as an essential part of a sounder analysis of more accurate and extensive population-data. The sciences of eugenics and demography have reached a point where such a plan seems entirely feasible.

15. The consummation of a "Populational Census and Registry" as herein outlined is a goal which, if reached, would mark a definite milepost in a better understanding of the population of the United States, and of each constituent State and community, and would provide for each individual person a definite, usable record of his or her own personal identification and demographic qualities.

16. Such a registry would furnish the world's most accurate and extensive body of facts available for studies which would draw the most accurate factual picture and would deduce the most basic causes of the actual conditions, changes and trends, possible to draw and to deduce for any selected geographical region, in reference to populational numbers, distribution and qualities—racial, linguistic, social, educational, physical, mental, spiritual and economic. In the future, the most effective long-time population-policies will probably be based upon sound "population-bookkeeping."

POPULATION STATISTICS

By Leon E. Truesdell

Chief Statistician for Population, U. S. Bureau of the Census

POPULATION GROWTH

The population of continental United States on April 1, 1930, the date of the most recent census, was 122,775,046, as compared with 105,710,620 on Jan. 1, 1920, the difference

representing an increase of 17,064,426, or 16.1 per cent. In 1790, when the first census was taken, the population was only 3,929,214. (For population at each census since 1790, with intercensal increase, see THE AMERICAN YEAR BOOK, 1935, page 532.)

In the early decades of census history the population increased about one-third every ten years. The rate of increase has been gradually declining, however, until the current decade seems likely to show an increase of less than eight per cent.

To meet the demand for current figures for use in computing birth rates, per capita costs, etc., the population of the United States has been estimated for July 1 of each year since 1930 on the basis of the annual data on births and deaths (with due allowance for under-registration), and net immigration figures. The estimate for July 1, 1937, is 129,257,000, this representing an increase of 828,000, or 0.64 per cent, over the 1936 estimate of 128,429,000.

On the basis of probable trends in the birth rate and the death rate, and assuming that there will be no considerable immigration from foreign countries, the population of the United States has been estimated or forecast for several decades into the future, as follows: For 1940, 132,000,000; for 1950, 138,000.000; for 1960, 142,000,000. Shortly after 1970, under these assumed conditions, the population will reach its maximum and a slow decline will begin.

The most significant data on births and deaths which need to be considered in any study of probable future trends in population are presented in the following table, which gives for each year from 1920 to 1936 the number of births and deaths reported in the registration area (which since 1933 has included all States), the annual rates per 1,000 of the population, and a three-year moving average rate.

BIRTHS AND DEATHS IN THE REGISTRATION AREA: 1920 TO 1936

(The birth registration area included 59.8 per cent of the total population of the country in 1920 and the death registration area 82.2 per cent; in 1933 both areas had been extended to include the entire country.)

Year	Births			Deaths			United States totals — partly estimated for years prior to 1933 (thousands)		
	Number	Rate per 1,000 population		Number	Rate per 1,000 population		Births	Deaths	Excess of births over deaths
		Annual	3-year moving average		Annual	3-year moving average			
1936....	2,144,790	16.7		1,479,228	11.5		2,145	1,479	666
1935....	2,155,105	16.9	16.9	1,392,752	10.9	11.1	2,155	1,393	762
1934....	2,167,636	17.1	16.9	1,396,903	11.0	10.9	2,168	1,397	771
1933....	2,081,232	16.6	17.1	1,342,106	10.7	10.9	2,081	1,342	739
1932....	2,074,042	17.4	17.3	1,308,529	10.9	10.9	2,178	1,360	818
1931....	2,112,760	18.0	18.1	1,322,589	11.1	11.1	2,232	1,374	858
1930....	2,203,958	18.9	18.6	1,343,358	11.3	11.4	2,328	1,396	932
1929....	2,169,920	18.9	19.2	1,386,363	11.9	11.8	2,291	1,448	843
1928....	2,233,149	19.7	19.7	1,378,675	12.1	11.8	2,368	1,446	922
1927....	2,137,836	20.6	20.3	1,236,949	11.4	11.9	2,440	1,352	1,088
1926....	1,856,068	20.6	20.9	1,285,927	12.2	11.8	2,412	1,428	984
1925....	1,878,880	21.4	21.6	1,219,019	11.8	12.0	2,467	1,360	1,107
1924....	1,930,614	22.6	22.2	1,173,990	11.8	12.0	2,534	1,328	1,206
1923....	1,792,646	22.4	22.5	1,193,017	12.3	12.0	2,478	1,360	1,118
1922....	1,774,911	22.5	23.1	1,101,863	11.8	11.9	2,456	1,290	1,166
1921....	1,714,261	24.3	23.5	1,032,009	11.6	12.2	2,622	1,253	1,369
1920....	1,508,874	23.7		1,142,558	13.1		2,522	1,389	1,133

URBAN-RURAL POPULATION

Of the population returned in the 1930 census, 68,954,823, or 56.2 per cent, were living in urban territory, that is, in cities and other incorporated places having 2,500 inhabitants or more. The percentage urban at the time of the first census in 1790 was only 5.8. The increase in this percentage has therefore been continuous and rather rapid, though there are some indications that the increase since 1930 has been somewhat less rapid than theretofore.

The following table shows the population classified as urban and rural for each census since 1790, and shows also the number of persons living in cities of 100,000 or more.

POPULATION OF THE UNITED STATES IN URBAN AND RURAL AREAS: 1790 TO 1930*

Census year	Total population	In cities of 100,000 or more		In places of 2,500 or more (urban population)		Rural population (outside places of 2,500 or more)	
		Number	Per cent	Number	Per cent	Number	Per cent
1790	3,929,000			229,000	5.8	3,700,000	94.2
1800	5,308,000			342,000	6.4	4,966,000	93.6
1810	7,240,000			503,000	6.9	6,737,000	93.1
1820	9,638,453	124,000	1.3	677,000	7.0	8,961,000	93.0
1830	12,866,020	203,000	1.6	1,085,000	8.4	11,781,000	91.6
1840	17,069,453	518,000	3.0	1,973,000	11.6	15,091,000	88 4
1850	23,191,876	1,175,000	5.1	3,901,000	16.8	19,291,000	83.2
1860	31,443,321	2,639,000	8.4	6,531,000	20.8	24,912,000	79.2
1870	38,558,371	4,130,000	10.7	10,095,000	26.2	28,464,000	73.8
1880	50,155,783	6,241,240	12.4	14.358,167	28.6	35,797,616	71.4
1890	62,947,714	9,697,960	15.4	22,298,359	35.4	40,649,355	64.6
1900	75,994,575	14,208.347	18.7	30,380,433	40.0	45,614,142	60.0
1910	91,972,266	20,302,138	22.1	42,166,120	45.8	49,806,146	54.2
1920	105,710,620	27,429,326	25.9	54,304,603	51.4	51,406,017	48.6
1930	122,775,046	36,325,736	29.6	68,954,823	56.2	53,820,223	43.8

* Data for 1790 to 1870 based mainly on compilations made by W. S. Thompson and P. K. Whelpton and published in Population Trends (1933), page 20; data for 1880 to 1930 from Census Reports.

GAINFUL WORKERS BY INDUSTRY

Persons 10 years old and over, who usually work at a gainful occupation, even though temporarily unemployed at the time of the census, are counted as gainful workers. The distribution of these workers into four broad groups on the basis of industry is presented in the following table for the census years from 1820 to 1930. The statistical foundation for this series is none too satisfactory in the earlier years, but on the basis of available estimates it may be assumed that in 1820 about 72 per cent of the entire working population was engaged in agriculture or in closely related activities, leaving less than 28 per cent for the non-agricultural occupations. By 1930 these relations were more than reversed, 78 per cent of the workers being engaged in non-agricultural occupations and only 22 per cent in agriculture. The increase in the percentage of gainful workers engaged in non-agricultural occupations, it may be noted, runs almost exactly parallel with the increase in the percentage of the population classified as urban.

GAINFUL WORKERS 10 YEARS OLD AND OVER IN FOUR BROAD INDUSTRIAL GROUPS: 1820 TO 1930*

Census year	All occupations	Agriculture, etc.†		Manufacturing and construction‡		Transportation and trade §		Service occupations ¶	
		Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
1820	2,881,000	2,082,000	72.3	358,000	12.4	72,000	2.5	369,000	12.8
1830	3,940,000	2,788,000	70.8	535,000	13.6	122,000	3.1	495,000	12.6
1840	5,420,000	3,739,000	69.0	807,000	14.9	207,000	3.8	667,000	12.3
1850	7,697,000	4,990,000	64.8	1,350,000	17.5	415,000	5.4	942,000	12.2
1860	10,531,000	6,340,000	60.2	2,100,000	19.9	783,000	7.4	1,308,000	12.4
1870	12,927,000	6,961,000	53.8	2,922,000	22.6	1,347,000	10.4	1,697,000	13.1
1880	17,390,000	8,595,000	49.4	4,449,000	25.6	2,122,000	12.2	2,224,000	12.8
1890	23,319,000	9,942,000	42.6	6,377,000	27.3	3,650,000	15.7	3,350,000	14.4
1900	29,073,000	10,889,000	37.5	8,451,000	29.1	5,444,000	18.7	4,289,000	14.8
1910	37,454,000	11,946,000	31.9	11,594,000	31.0	7,989,000	21.3	5,925,000	15.8
1920	41,854,000	11,193,000	26.7	13,909,000	33.2	10,433,000	24.9	6,319,000	15.1
1930	48,830,000	10,722,000	22.0	15,095,000	30.9	13,950,000	28.6	9,063,000	18.6

* Data for 1820 to 1860 are estimates made by P. K. Whelpton and published in the *Journal of the American Statistical Association*, Vol. 21, No. 155, September, 1926; data for 1870 to 1900 are estimates made by R. J. Hurlin and M. B. Givens, and published in *Recent Social Trends* (1933), Vol. 1, pp. 281 and 284; data for 1910 to 1930 represent very slight adjustments of census returns.

† Includes forestry and fishing.

‡ Includes mining.

§ Includes clerical occupations.

¶ Comprises domestic service, professional service, and "Public service not elsewhere specified."

OLD AGE PENSIONERS

Among the important changes in population characteristics which we may expect in the years just ahead is a marked increase in the number of persons of advanced age and an actual, as well as a relative, decrease in the numbers of young persons. Of particular significance at the present time is the rapid increase in the number of persons who would be eligible for old-age pensions. The number of such persons can be computed with a satisfactory degree of accuracy for several years subsequent to the census, and even for two or three decades into the future, by applying available survival rates to the numbers now in the various age groups of middle life. The actual numbers reported or to be expected in three significant age groups are shown in the following table. On a percentage basis it may be noted that the population 65 years old and over, which formed only three per cent of the total in 1870, had increased to 5.4 per cent in 1930, and may be expected to represent 9.9 per cent in 1960.

POPULATION 60 YEARS OLD AND OVER: 1870 TO 1960

Year	Number of Persons (thousands)			
	All Ages	60 and Over	65 and Over	70 and Over
Census:				
1870....	38,558	1,933	1,154	669
1880....	50,156	2,828	1,723	998
1890....	62,622	3,875	2,417	1,407
1900....	75,995	4,872	3,080	1,778
1910....	91,972	6,217	3,950	2,270
1920....	105,711	7,916	4,933	2,865
1930....	122,775	10,385	6,634	3,863
Estimate:				
1935....	127,341	11,616	7,498	4,349
1940....	132,000	13,244	8,379	4,912
1950....	138,000	16,715	10,874	6,349
1960....	142,000	20,469	14,049	8,396

ILLITERACY

The Census Bureau defines as illiterate any person 10 years of age and over who is not able to read and write either in English or in some other language. In 1930, 4.3 per cent of the population 10 years old and over were returned as illiterate. This

percentage may be compared with 6 per cent in 1920; 7.7 per cent in 1910; 10.7 per cent in 1900; 13.3 per cent in 1890; and 17 per cent in 1880. In our present population there is a very close connection between illiteracy and age, resulting from the rapid improvement and extension of school facilities during recent decades. Thus, according to the 1930 census, only 1.2 per cent of the population 10 to 14 years old was illiterate, as compared with 3.3 per cent of the persons 25 to 34 years old; 6.6 per cent of the persons 45 to 54 years old; and 9.7 per cent of the persons 65 years old and over.

INABILITY TO SPEAK ENGLISH

Of the total foreign-born white population, 869,865, or 6.6 per cent, were returned in the 1930 census as unable to speak English. Of this number, 477,133 were counted as illiterate, while 392,732 were able to read and write, presumably each in his own native language. This last figure is significant as representing approximately the number of persons able to read the foreign language newspapers but not those printed in English.

CITIZENSHIP

Of the total number of foreign-born persons returned in the 1930 census, 55.8 per cent had been naturalized, as compared with 46.6 per cent in 1920. The distribution of the foreign-born population by citizenship is summarized in the following table:

CITIZENSHIP OF THE FOREIGN BORN: 1930 AND 1920

Citizenship	Number		Per cent	
	1930	1920	1930	1920
Total	14,204,149	13,920,692	100.0	100.0
Naturalized	7,919,536	6,489,883	55.8	46.6
Not returned as naturalized	6,284,613	7,430,809	44.2	53.4
Having first papers	1,266,419	1,222,553	8.9	8.8
Alien	4,518,341	5,406,780	31.8	38.8
Unknown	499,853	801,476	3.5	5.8

DWELLINGS AND FAMILIES

The total number of dwellings occupied by private families in accordance with the 1930 census was 25,204,976, of which number 90.6 per cent were one-family dwellings; 6.9 per cent were two-family dwellings; and 2.6 per cent provided accommodations for three or more families. The 29,904,663 families were distributed among the various classes of dwellings as follows: in one-family dwellings, 76.4 per cent; in two-family dwellings, 11.6 per cent; and in three-plus family dwellings, 12.1 per cent.

1935 CENSUS OF PUERTO RICO

The detailed results of the 1935 Census of Puerto Rico taken by the Puerto Rico Reconstruction Administration are now available. The distribution of the population of Puerto Rico by age is shown in the first table next page with a column showing the age distribution o fthe population of continental United States for comparison.

Other interesting classifications indicating certain changes in the population of Puerto Rico since the American occupation are indicated by the second table next page showing numbers of the Puerto Rican population respectively able to read and write, and able to speak English, from the earliest census giving these data to 1935. The percentage of the population 10 years old and over able to read and write, for example, had increased from 20.4 in 1899 to 64.9 in

POPULATION OF PUERTO RICO AND CONTINENTAL UNITED STATES BY AGE: 1935

Age (Years)	Puerto Rico		Continental United States,* per cent
	Number	Per cent	
All ages...	1,723,534	100.0	100.0
Under 5.....	246,437	14.3	8.2
5 to 9.....	239,148	13.9	9.3
10 to 14.....	224,786	13.0	9.8
15 to 19.....	183,039	10.6	9.3
20 to 24.....	205,097	11.9	8.9
25 to 34.....	214,130	12.4	15.9
35 to 44.....	181,329	10.5	13.9
45 to 54.....	116,433	6.8	11.2
55 to 64.....	62,611	3.6	7.5
65 to 74.....	31,984	1.9	4.1
75 and over..	18,521	1.1	1.7
Not reported	19	—	—

* Estimated for April 1, 1935.

1935; and the percentage able to speak English had increased from 3.6 in 1910 to 22.9 in 1935.

STATISTICAL SUMMARIES

Population data under a number of other important classifications, such as color and nativity, country of origin, mother tongue, and value or rental of home, are contained in the articles on population in THE AMERICAN YEAR BOOK, 1933 (pages 577 to 584); 1934 (pages 548 to 554); 1935 (pages 532 to 538); and 1936 (pages 540 to 545). The most compact official publication providing a fairly complete summary of the population statistics is the *Abstract of the Fifteenth Census.* A briefer set of summary tables is contained in the *Statistical Abstract,* which may be available in some libraries not having the *Census Abstract.*

The results of the 1935 census of Puerto Rico are presented in Popula-

LITERACY AND ABILITY TO SPEAK ENGLISH IN PUERTO RICO: 1899 TO 1935

Census year	All persons 10 years old and over	Able to read and write		Able to speak English	
		Number	Per cent	Number	Per cent
1935.....	1,237,949	804,034	64.9	283,897	22.9
1930.....	1,093,423	641,085	58.6	212,231	19.4
1920.....	904,423	407,334	45.0	89,427	9.9
1910.....	781,600	261,516	33.5	28,262	3.6
1899.....	659,294	134,416	20.4	—	—

tion Bulletin No. 1: *Number and Distribution of Inhabitants;* Population Bulletin No. 2: *Characteristics of the Population Including Occupations;* and a bulletin on *Agriculture,* any of which may be obtained either from the Census Bureau or from the Puerto Rico Reconstruction Administration.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Colonization Society, 516 Colorado Bldg., Washington, D.C.

Naturalization Aid League, 175 E. Broadway, New York City.

Scripps Foundation for Research in Population Problems, Miami University, Oxford, O.

American Ethnological Society, American Museum of Natural History, New York City.

American Jewish Committee, 461 Fourth Ave., New York City.

Ancient Order of Hibernians, 1648 Westmont Ave., Pittsburgh, Pa.

Bavarian National Assn. of N.A., 80 West 102nd St., New York City.

Centro Vasco Americano Society, 48½ Cherry St., New York City.

English-Speaking Union of the U.S., 19 W. 44th St., New York City.

Federation De L'Alliance Française, 22 East 60th St., New York City.

Federation of Polish Jews in America, 225 W. 34th Street, New York City.

Foreign Language Publishers' Assn. of the U.S., Inc., 110 E. 42nd St., New York City.

Hebrew Sheltering and Immigrant Aid Society of America, 425 Lafayette St., New York City.

Holland Society of N.Y., 90 West Street, New York City.

Huguenot Society of America, 2 W. 45th St., New York City.

Hungarian Society of N.Y., 1440 Broadway, New York City.

Indian Rights Assn., 301 S. Seventeenth St., Philadelphia, Pa.

Japanese Assn., Inc., 1819 Broadway, New York City.

Jewish National Workers' Alliance of America, 404 Fourth Ave., New York City.

Jewish Welfare Board, 200 Fifth Ave., New York City.

Lake Mohonk Indian Conference, Mohonk Lake, N.Y.

Lithuanian Alliance of America, 307 W. 30th St., New York City.

National Assn. for Advancement of Colored People, 69 Fifth Ave., New York City.

National Council of Jewish Women, 625 Madison Ave., New York City.

Netherland American Foundation, 274 Madison Ave., New York City.

Ordine Fieli D'Italia in America, 225 Lafayette St., New York City.

Polish Federation of New York City, Inc., 23 St. Marks Place, New York City.

Polish National Alliance, 1406–8 West Division St., Chicago, Ill.

Russian National Society, 5 Columbus Circle, New York City.

Sons of Italy, 377 Broadway, New York City.

United Roumanian Jews of America, Inc., 799 Broadway, New York City.

Young Judea, Inc., 111 Fifth Ave., New York City.

Young Men's Hebrew Assn., Lexington Ave. and 92nd St., New York City.

Young Women's Hebrew Association, 31 West 110th Street, New York City.

Zionist Organization of America, 111 Fifth Ave., New York City.

DIVISION XV

SOCIAL PROBLEMS AND CONDITIONS

PUBLIC AND PRIVATE SOCIAL WORK

By Emma O. Lundberg

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ACTIVITIES UNDER THE FEDERAL SOCIAL SECURITY ACT

The Social Security Act became operative in February, 1936. The first fiscal year ended June 30, 1936 with the various assistance programs well under way in the majority of the States. By the end of the second fiscal year, plans had been approved by the Social Security Board for one or more public assistance programs in 44 States, the District of Columbia, Alaska, and Hawaii. By Dec. 31, 1937, 50 plans had been approved for old age assistance, 40 for aid to needy blind, and 40 for aid to dependent children in their own homes. For the public assistance programs Federal funds are granted in specified ratios to state or state and local funds when the state plan has been approved by the Social Security Board. The Board reports that "under these programs, at least 2,000,000 households were benefiting directly from aid provided, because of their need, by their State and National Governments."

By the end of the calendar year 1937, Federal funds had been made available under sections of the Social Security Act administered by the Children's Bureau, U. S. Department of Labor, to the 48 States, the District of Columbia, Alaska, and Hawaii for maternal and child health services; crippled children's services were in operation in 46 States, the District of Columbia, Alaska, and Hawaii and child welfare services in 44 States, the District of Columbia, Alaska, and Hawaii.

In the 51 jurisdictions covered by the act, activities in extending and developing public health services were under way through grants administered by the United States Public Health Service. Services for vocational rehabilitation had been extended in 47 States and Hawaii by grants administered by the Office of Education of the Department of the Interior; the District of Columbia and Puerto Rico receive Federal funds under other legislation for this type of service.

SOCIAL INSURANCE MEASURES

Plans have been developed by the Social Security Board for administration of the Federal program of old age insurance and the Federal-State program of unemployment compensation. The section of the act relating to old age benefits is administered entirely by the Federal Government. By the end of the fiscal year 1937 more than 30,000,000 applications for account numbers had been received by the Board, and a system has been established to record individual wages which will be the basis for the monthly retirement benefits payable in monthly installments to persons covered by the act, attaining the age of 65 years on or after January 1, 1942. Lump-sum payments or death benefits were payable from Jan. 1, 1937, and such payments have already been made to workers or their survivors in the 48 States and the District of Columbia.

The Social Security Act provides

that the cost of administration of State unemployment compensation laws may be borne by the Federal Government when such laws have been approved by the Social Security Board. Unemployment Compensation laws have been enacted in all States, the District of Columbia, Alaska, and Hawaii, and all of them had been approved by the Board before the end of July, 1937. Wisconsin enacted an unemployment compensation law in advance of all the other States, and the first compensation was paid under this law in August, 1936. Unemployment benefits will not be payable in any other State until January, 1938, when qualified workers in 21 additional States and the District of Columbia will be entitled to compensation. In the remaining jurisdictions benefits will be payable by July, 1939. It is estimated that in June, 1937 the number of workers in jobs covered by State unemployment compensation laws was nearly 21,000,000.

OLD AGE ASSISTANCE

During the fiscal year ended June 30, 1937 the total amount of obligations incurred for old age assistance (Federal, State, and local funds) was $243,718,182, excluding administrative costs. In October, 1937 old age assistance was provided in the 49 jurisdictions co-operating with the Social Security Board at a total cost, excluding administration, of $28,696,347. Recipients numbered 1,507,618, and the average payment per recipient for all States was $19.04. The lowest average monthly grant was $4.47 in Mississippi and the highest $39.83 in Colorado. In 18 States monthly grants averaged less than $15; in 24 States from $15 to less than $25; and in seven States $25 or over.

In 44 of the States, with old age assistance plans approved by the Social Security Board, payments may be made to persons 65 years of age and over; in Indiana, Missouri, New Hampshire, Oregon, and Pennsylvania the minimum age is 70 years, and in Colorado 60 years. Beginning Jan. 1, 1940, all plans for which Federal funds are granted must make aid available to needy people at 65 years or over. The Social Security Board in its annual report for the fiscal year ended June 30, 1937, shows that more than four-fifths of the men and women accepted by the States for old age assistance were native born. Negroes comprised slightly more than 11 per cent of the number; this approximates the proportion of Negroes in the total population. About four out of ten of the recipients of old age assistance were married and living with husband or wife; in about half of these cases both husband and wife were receiving grants, while in a large number of cases both were eligible for aid but only one received assistance. The Board's report states: "Federal participation in old age assistance is extended only for payments to persons in need. 'Need' is determined by the States; in general, it is interpreted in State legislation as the need which remains after legally responsible relatives of an aged person have contributed to his support in so far as they are able. In principle, therefore, payments for old age assistance are to be considered as a supplementary amount, to be added to anything which the applicant and his family can provide, to assure him a livelihood at the standard maintained for recipients of assistance within the State."

AID TO THE BLIND

During the periods for which reports were made by State agencies, 9,397 persons were accepted for the assistance provided under the Social Security Act for the needy blind. The Social Security Board in its annual report says: "Possibly the most significant conclusion to be drawn from these reports is the extent to which the need of these blind persons was associated with old age. More than a third of those accepted were 65 or more, while very small numbers of persons under 21 were accepted." Federal funds may not be used for payment of aid to the blind to persons who themselves are receiving old-age assistance. About 80 per cent of the blind recipients of aid were living in households in which no other form of public aid was re-

ceived. During the fiscal year ended June 30, 1937, $9,005,194 were expended by Federal, state and local units for assistance to the blind in States granting this aid under plans approved by the Social Security Board. An average of 29,954 blind persons received aid each month. The average monthly grants varied greatly in the different States. In October, 1937, the average grant for recipient was $25.82 for all States, ranging in individual States from $9.07 to $47.88.

AID TO DEPENDENT CHILDREN

Great progress was made during the year in extending aid to dependent children in their own homes. In October, 1937, aid to dependent children was administered in 38 States, the District of Columbia, and Hawaii under plans approved by the Social Security Board. During the month, recipients of aid included 199,667 families, in which there were 496,182 children for whose benefit assistance was given. Expenditures from Federal, state, and local funds totaled $6,203,699 for the month, exclusive of administrative costs. The average grant per family was $31.07 for the whole number of States. Among the States average monthly grants ranged from $10.39 in Arkansas, $11.64 in Oklahoma, and $13.57 in Alabama, to $44.32 in New York, $51.70 in Rhode Island, and $59.16 in Massachusetts.

Ten States have not as yet amended their laws to conform with the requirements of the Federal Social Security Act, or plans have not been approved for other reasons: Connecticut, Florida, Illinois, Iowa, Kentucky, Mississippi, Nevada, South Dakota, Texas, and Virginia. Three or four of these States have been providing local public aid to dependent children under "mothers' aid" laws fairly extensively for many years, but in the other States similar laws have had little application. These States include more than one-fifth of the population of the United States. When they have been added to the States receiving Federal funds for aid to dependent children the number of children for whom this form of assistance is provided may be expected to exceed 600,000, even with the present standards of inclusion. This is considerably more than twice the estimated number of children receiving public aid in their own homes before Federal funds became available to States under the Social Security Act. One of the major factors in the extension of this form of aid is the requirement that States shall provide some funds; formerly the entire cost was borne by counties or other local governmental units in most of the States.

Under the Social Security Act eligibility requirements have been made more liberal than they were in most States under "mothers' aid" laws. The result of this broadening is seen in the distribution of figures on parental status of children accepted for aid in the various States during a selected period, as given in the annual report of the Social Security Board for the fiscal year ended June 30, 1937. Of the total number of children included in the analysis, 17.5 per cent were living with both parents, or with a parent and step-parent. Children living with the mother included 73.9 per cent; living with the father, 2.5 per cent; living elsewhere, mainly with near relatives, 6 per cent. Under the old laws, in many States aid was limited largely to children of widows; in the present group children whose fathers were dead comprised something less than half of the total number. Desertion by the father, divorce, legal or other separation of the parents, the father or mother in an institution, death of the mother, and mother unmarried, are among the other types of parental status shown in the report. This extension of eligibility should make this aid an increasingly important factor in preventing the need for foster care of dependent children.

FEDERAL AND STATE CHILD WELFARE SERVICES

The Social Security Act provides for an annual Federal appropriation of $1,500,000 which is to be

allotted to the States through the Children's Bureau of the U. S. Department of Labor for the purpose of "establishing, extending, and strengthening, especially in predominantly rural areas, public welfare services for the protection and care of homeless, dependent, and neglected children, and children in danger of becoming delinquent." All but four States are carrying on activities under plans approved by the Children's Bureau. Federal Funds are used almost entirely for salaries of State and local child welfare workers. On July 1, 1937 Federal funds were providing in full or in part for the salaries of 196 consultants, specialists, and organizers of child welfare services on the staffs of State welfare departments and of 304 experienced child welfare workers in rural counties or other areas.

The extension of state-wide programs for county public welfare administration under the laws enacted in a large number of States during the past two years has given a new impetus to child welfare activities initiated when Federal funds became available for child welfare services. One of the major difficulties encountered in establishing county public welfare work on an adequate basis is the lack of experienced social workers who are adapted for service in rural communities. In most of the States the plans for child welfare services include provision for various types of training to equip workers for the State and local services. Activities that have been carried on in rural areas have brought to light many instances of neglect, needless child dependency, and incipient delinquency, and have created local and state-wide interest in the need for adequate programs for the care of dependent children, proper provision for the feebleminded, corrective treatment of physically handicapped children, and facilities for psychiatric services available to children with serious personality and behavior problems. They are also calling attention to the serious consequences of inadequate relief and lack of medical care in rural areas.

SERVICES FOR CRIPPLED CHILDREN

State programs for crippled children's services in rural areas, under the Social Security Act, have been carried on during 1937 in co-operation with the Children's Bureau of the U. S. Department of Labor in 46 States, the District of Columbia, Alaska, and Hawaii. Federal funds are matched in full by state, or state and local, funds. At the end of the calendar year the program was administered in 23 States by the state health agency; in 14 by the state welfare agency; in six by a state crippled children's commission; in four by the state department of education; in one by the state university hospital; and in one by an interdepartmental committee representing three state agencies. Standards for the qualifications of personnel and for hospital facilities and equipment have been set up by the state agencies. By the end of the year a medical director was giving full-time or part-time service in 29 States, and in other States technical advisory committees, including orthopedic surgeons, pediatricians, and other physicians, have been active. Physical therapists are employed in some States, and opportunities for obtaining training in physical therapy at recognized centers are provided for in the plans of several States. Increasingly the administrative staffs include medical social workers.

The Children's Bureau reports that progress has been made toward providing a registration system in each State, giving accurate information concerning the number and location of crippled children in need of care, and that valuable data on the extent and causes of crippling conditions are being accumulated. The total number of diagnostic clinics held and the number of such clinics in areas not previously served have increased. These clinics are often used also for re-examination of crippled children and for such treatments as physical therapy, application of casts, and adjustment of braces. Convalescent and after-care services have developed more slowly than surgical services and hospital care. The Children's

Bureau says, in its annual report for the year ended June 30, 1937: "Convalescent facilities are nowhere adequate, and in some places they are almost non-existent. Most rural communities lack resources for medical and nursing care and for physical therapy in the home. Facilities for after-care are being extended through the use of community resources for providing care in institutions for convalescents, in foster homes, and in the child's own home."

On June 30, 1937, reports for 99,722 crippled children were on file in 36 States, Alaska, and Hawaii. During the year epidemics of poliomyelitis were reported in a number of States, and special allotments were made from the Federal fund to Alabama, Georgia, Mississippi, Tennessee, and Virginia, to permit prompt treatment of children who were ill, so that crippling might be prevented.

STATE AND LOCAL WELFARE DEPARTMENTS

The legislatures of 43 States, Alaska, Hawaii, and Puerto Rico met in regular session during the calendar year 1937. Special sessions were also held in many of these States and in three others, leaving only two States—Louisiana and Mississippi—in which there was no legislative session during the year. In most of the States important public welfare measures were enacted. During the past three years 39 States have revised radically their provision for state or local public welfare administration, creating new welfare departments, combining welfare or relief agencies, or extending functions and reorganizing activities of existing departments.

In 1937 new departments were established in Iowa, Kansas, Missouri, Pennsylvania, Alaska and Hawaii. In Arkansas, Florida, New Hampshire, and South Carolina welfare departments were created to succeed temporary departments. In Arizona, Idaho, Nevada, Washington, and Wyoming reorganized departments replaced existing departments. Two or more welfare or relief departments or commissions were combined into one welfare department and functions redefined in Georgia, Michigan, Montana, Nebraska, New Mexico, South Dakota, Tennessee, and Texas. In 18 other States laws relating to state or local welfare administration were amended. In the States not already having such provision, authority was given the welfare department to cooperate with the Federal Government in connection with administration of the public assistance measures and child welfare services covered by the Social Security Act.

A Territorial Department of Public Welfare was created in Alaska, and a Territorial Board of Public Welfare in Hawaii. The Alaska department was given duties formerly conferred upon the Governor relating to the care of sick and needy persons in the Territory. Administration of old age assistance, aid to the blind, and aid to dependent children were included in the functions of the department. The Hawaii Board of Public Welfare superseded the Territorial Welfare and Relief Commission. It was authorized to supervise the administration of all public assistance, and to engage in child welfare activities. A county public welfare commission was provided for in each county and duties defined. The boards of child welfare which formerly administered aid to dependent children were abolished.

SOCIAL WELFARE IN IOWA

A State Department of Social Welfare was created in Iowa, the board of five members to be appointed by the Governor with the approval of the Senate. The board was authorized to establish in the department a division of old age assistance, a division of emergency relief, and a division of aid to the blind, aid to dependent children, and child welfare, and to appoint a superintendent for each of the three divisions. Establishment was authorized of county boards of social welfare. Powers of the existing Board of Control of State Institutions with respect to child welfare activities were transferred to the new department.

KANSAS

Kansas established a State Board of Social Welfare with five members appointed by the Governor with the advice and consent of the Senate. The Board was authorized to co-operate with the Federal Government in furnishing public assistance, and was given broad powers with respect to child welfare. County social welfare boards were provided for, the county commissioners serving as these boards. The state board was empowered to assume all the functions of the State Emergency Relief Committee when this committee is abolished by the Governor as having completed its work.

MISSOURI

Missouri established a State Social Security Commission, with five members appointed by the Governor with the advice and consent of the Senate, the state administrator to be appointed in the same manner. The powers and duties of the commission included administration of public assistance measures, and aid or relief in case of public calamity. The commission was directed to co-operate with the Federal Government in distribution of Federal funds, and was given supervision over child welfare activities. County social security commissions were authorized for each county. Provisions of the law giving the Board of State Managers of State Eleemosynary Institutions authority in relation to public assistance were repealed; the other duties of this agency were not changed.

PENNSYLVANIA

A State Department of Public Assistance was created in Pennsylvania, with a board of seven members and the State Treasurer and State Auditor General *ex officio*, the board and its secretary to be appointed by the Governor with the advice and consent of the Senate. The Department was authorized to administer old age assistance, aid to the blind, aid to dependent children, and general relief, and to assume the powers and duties of the State Emergency Relief Board which was abolished. The Department was empowered to receive Federal funds for assistance and welfare. County boards of assistance were provided for, the members to be appointed by the Governor. They were given the powers and duties of the local boards of trustees of the mothers' pension fund and the boards of trustees of the pension fund for the blind, both of which were abolished. Administration of old age assistance and aid to dependent children were transferred to the new Department from the existing State Department of Welfare. A County Institution District Law repealed the numerous poor laws and abolished the office of poor director; it established an institution district in each county and in the cities of Philadelphia and Pittsburgh to be managed by the commissioners of the counties and by the city departments of public welfare. Administration of relief and care of the poor was made a responsibility of these institution districts.

SOUTH CAROLINA

South Carolina created a State Department of Public Welfare to succeed the temporary department of the same name, with a board of seven elected by the legislature, outside its own membership, representing the congressional districts of the State. The board was given power to create, at its discretion, a State Advisory Committee of Public Welfare consisting of not more than fifteen members. It was the duty of the state department to supervise the administration by county departments of public assistance grants and general relief, and to co-operate with the Federal Government in assistance and welfare measures under the Social Security Act. The board is empowered to investigate and approve charitable organizations applying to the Secretary of State for a charter. A county department of public welfare was established in each county under a board of three persons appointed by the state board or the state director on recommendation of the county legislative delegation. County boards were authorized to create county advisory councils of not more than five members.

ARKANSAS

Arkansas established a State Department of Public Welfare to take the place of a department of the same name created in 1935 for two years. Appointment of a board of seven persons was lodged with the Governor. The department was given authority to administer or supervise the administration of all forms of public assistance and general relief, mental hygiene work, services to crippled children, and all child welfare activities. It was empowered to cooperate with the Federal Government in welfare matters and to receive and disburse funds granted to the State for public welfare purposes. The law provided for establishment of a county department of public welfare in each county or a district department for two or more counties, and specified their duties. The Juvenile Court Department, previously attached to the Attorney General's Office, was transferred to the State Department of Public Welfare.

FLORIDA

In Florida a State Welfare Board replaced the former Board of Social Welfare which had been created for the period ended July 1, 1937. The Governor was given power to appoint members of the Board, with confirmation by the Senate, and to appoint the state welfare commissioner, formerly appointed by the Board. The powers and duties of the Board and functions of district welfare boards remain essentially as they were under the previous state agency.

MICHIGAN

In Michigan a State Department of Public Assistance was created to replace the former State Welfare Department, the State Corrections Commission, and the State Emergency Welfare Relief Commission. The new state department was to begin operations January 1, 1938, but initiative petitions were filed against the new acts, with the result that the legislation will not go into effect unless approved at the general election on November 8, 1938. The law provided for administration by a Public Assistance Commission of five members appointed by the Governor. The department was authorized to co-operate with the Federal Government in handling the welfare and relief problems of the State, and was given certain duties with respect to supervision and assistance in child welfare activities. A county department of public welfare was provided for by a law effective 60 days after the establishment of the state department. These local boards were to succeed to the duties of the former county emergency relief commissions, county old-age assistance boards, county superintendents of the poor or city officials, and county welfare agents, and were to co-operate with the state department in handling the welfare and relief problems of the counties.

COUNTY BOARDS OF PUBLIC WELFARE

One of the outstanding features of welfare legislation in 1935, 1936, and 1937 was the establishment of county boards or departments of public welfare, usually mandatory. In addition to the States mentioned above in which county boards were created or authorized—Idaho, Iowa, Kansas, Michigan, Missouri, Pennsylvania, and the Territory of Hawaii—fourteen other States in 1937 established similar boards or amended earlier provisions. The States providing for such boards for the first time included: Georgia, Montana, Nevada, New Mexico, and Wyoming. Arizona, Minnesota, North Carolina, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Washington changed their earlier provisions for county boards, and Tennessee established fourteen districts for localized State welfare administration.

THE MERIT SYSTEM

An important feature of recent legislation relating to social welfare administration is provision for the merit system or other methods of obtaining qualified personnel. In 1937 Arizona enacted a law providing for a competitive merit system for state and county welfare department

personnel. A State Personnel Division was created in Arkansas and a civil service system for state employees was established. California passed a State Civil Service Act revising the merit system for appointment and promotion of state employees in conformity with a constitutional amendment adopted in 1934. Connecticut established a state-wide merit system to be administered by a State Personnel Department, covering all state employees except those specifically exempted. The Idaho State Department of Public Assistance was authorized to establish standards for state and county personnel and to provide for employment under a merit system. Indiana extended its merit system for employees of the State Department of Public Welfare to cover county department employees, and required county boards to appoint directors from the eligible lists, except in Marion County where the state department appoints the director.

The Kansas State Board of Social Welfare was authorized to establish standards of qualifications for state and county social workers. A personnel commission was created in Louisville, Ky. and was given the duty of providing for appointment by a merit system. Michigan authorized a state-wide merit system administered by a state Civil Service Commission. Montana provided for a merit system to regulate personnel in the state and county departments, to be established within a year from the effective date of the legislative act. New Hampshire provided for appointment of state and local welfare administration personnel on a merit basis in accordance with standards approved by the Governor and council.

In Pennsylvania an employment board of three members was created to provide a list of eligibles for appointment in the new Department of Public Assistance through competitive examination. South Carolina provided that state and county personnel must meet standards set by the state Department of Public Welfare, and the Tennessee State Department of Institutions and Public Welfare was directed to establish standards of services to be required of local governmental authorities under the social security program. The Utah State Department of Public Welfare was given the duty to fix standards of service and to hold examinations for positions in state and local welfare departments. The state director of the Washington Department of Social Security was authorized to establish, with the approval of the State Advisory Committee, a merit system for appointment to positions in the administration of the state social security act. The Wyoming State Department of Public Welfare was authorized to establish standards for state and county employees.

MARRIAGE LAWS

During the year a considerable body of protective legislation was enacted. Early in the year there was a great deal of publicity in regard to child marriages, which may have inspired some of the new laws and amendments on this subject. In the District of Columbia the age of consent for marriage was raised to 18 years for males and 16 for females, from the former ages of 16 and 14, respectively. A three-day period was established between the date of application for a marriage license and its issuance. Florida prohibited the issuance of a marriage license to any male under 18 years or any female under 16, with or without parental consent, unless the applicants are parents or expectant parents. The minimum marriage age for girls was raised to 16 years in Hawaii, from the former age of 15. In Rhode Island, where the marriage age was formerly 14 for males and 12 for females, it was raised to 18 years for males and 16 years for females, but issuance of licenses to persons under these ages was authorized on permission from a Domestic Relations Court following investigation by the State Department of Public Welfare. A new marriage law in Tennessee prohibited the issuance of a license to any person under 16 years of age and required a three-day period between application for a license and its issuance.

The restriction as to age may be removed and the provision as to waiting period suspended on order of a probate or juvenile court. Other States in which a 1937 law provided for a waiting period between application and issuance of license were: Illinois and West Virginia, three days; and Maryland, 48 hours.

An Illinois law requires, as a prerequisite for a marriage license, a physician's certificate that both parties are free from venereal disease, based on physical examination and laboratory tests made within 15 days before date of issuance of a license. Similar laws were enacted in Michigan and New Hampshire. An amendment to the Wisconsin marriage law requires both parties to present a certificate, issued within 15 days prior to the application for license, showing freedom from syphilis; formerly only the man was required to present such a certificate.

MENTAL HYGIENE

In several States the legislatures provided for investigation of the problems of mental disease and mental defect. The Arizona legislature requested the Governor to have a thorough investigation made of the institutional care and treatment of mentally diseased persons, looking toward the establishment in the State of a modern psychopathic institution. The new State Department of Public Welfare in Georgia was authorized to administer or supervise all mental hygiene work, including the operation of all state institutions for the care of mentally ill or feeble-minded persons and non-institutional care for this group. The Governor of Maryland was directed to appoint a commission of nine persons to survey the needs and existing facilities for care and treatment of insane and mentally defective persons living in the State and to report its findings and recommendations to the legislature in 1939. The Massachusetts legislature authorized the establishment of a commission of seven persons to be appointed by the Governor to investigate and study the whole matter of the mentally diseased in their relation to the Commonwealth, including the work of the Department of Mental Diseases. In Ohio various laws relating to mentally handicapped persons were repealed and a comprehensive new measure was enacted which included provision for a Division of Mental Diseases in the State Department of Public Welfare.

DELINQUENCY AND JUVENILE COURTS

Legislation affecting juvenile offenders and amendments to laws relating to juvenile and family courts were enacted in a large number of States. In New York a joint legislative committee was created to investigate existing facilities, public and private, for the care and treatment of children under the jurisdiction of the Children's Court, and of minors 16 to 18 years of age under the jurisdiction of other courts. The committee was directed to report to the legislature on or before Feb. 1, 1938. In Rhode Island the legislature created a juvenile court commission, composed of ten citizens appointed by the Governor. The commission was directed to study the laws affecting juveniles in the State, to consider the desirability of transferring the jurisdiction of the present juvenile courts to the domestic relations division of the superior courts, and to consider the establishment of one juvenile court for the entire State. It is to report to the General Assembly in 1938. An act making an appropriation to the Illinois State Department of Public Welfare for specified purposes included an item for salaries and other expenses for organizing groups to aid in the prevention and reduction of juvenile delinquency. In Kansas and Hawaii the death penalty was prohibited for minors under 18 years of age convicted of a capital offense. In place of the authorization for trial by jury in juvenile court cases, which was formerly in the Washington law, a provision was substituted directing that all cases be tried without a jury.

RECREATION

Colorado, New Jersey, Oklahoma and Washington enacted laws pro-

hibiting marathon dances, walkathons and similar endurance contests. Indiana and South Dakota empowered cities and towns to construct and operate swimming pools. In Maryland county commissioners or the legislative bodies of incorporated cities and towns were authorized to establish or maintain reasonable facilities for public recreation. In Minnesota all political sub-divisions were authorized to acquire recreational facilities and operate programs of public recreation and playgrounds independently or in co-operation. Counties and municipalities in Tennessee were authorized to provide supervised recreational systems.

COMMUNITY CHESTS AND COUNCILS

A new building constructed by the Works Progress Administration for the School of Social Service Administration of Ohio State University was formally opened on Nov. 12, 1937. The school is the official training center for community chest executives, and is jointly sponsored by the university and the Community Chests and Councils, Inc. Community Chests and Councils, Inc., reported as of Nov. 19, 1937 that community chests in 103 cities had raised $18,079,880 for the year 1937. Up to the date of reporting, $18,520,640 had been raised by 106 chests for the year 1938, or 95.8 per cent of the goal.

PUBLIC AND PRIVATE AGENCY RELATIONSHIPS

On April 9 and 10, 1937, a discussion of the relationship between public and private services for child welfare was held in Washington under the auspices of the Children's Bureau, U. S. Department of Labor. About 70 representatives of public and private child welfare organizations participated. The discussion was based on the following premises:

1. In every State there should be a comprehensive program of child welfare. Extension of both public and private services is necessary in many areas where adequate resources for case work and foster care do not now exist. Private agencies operating under approved standards should have the fullest opportunity for development. Good public service should be fostered by good private service.
2. A program for child welfare should include facilities for home conservation, child protection, and appropriate forms of care for *all* children in need—dependent, neglected, delinquent and handicapped.
3. Adequate community provision for family relief and service should be promoted as a foundation for a child welfare program.

Among the findings of the group were the following:

The trend is toward localization in county units and away from centralization in state welfare departments of direct care for dependent and neglected children in foster homes or institutions.

Provision for adequate case-work service to children in their own homes should receive the chief emphasis in a community child welfare program, and should be closely related to other forms of aid and service to families and children.

It is the responsibility of the state welfare departments to see that proper standards of child-placing are developed and followed by local units.

The resources for service to children should be canvassed carefully, with special attention to the possibility of their extension to rural areas, and public and private agencies should collaborate in the development of comprehensive child-welfare programs. It is desirable that both public and private agencies be encouraged to participate in the extension of child-welfare activities to uncovered areas.

The extension of case-work services for children is bringing to light the urgent need for development of more adequate state-wide provision for the care of children who are handicapped by reason of mental deficiency or mental disturbance. The resources of existing

public and private organizations and provision for proper school facilities should be considered in developing such programs.

Public and private child welfare and family welfare organizations are jointly responsible for interpreting to the public the needs of children and the social cost of failure to meet these needs adequately. Responsibility rests upon citizens, as taxpayers and as contributors, to support both public and private services for children in their own homes and for children under the care of agencies and institutions.

A mutual obligation rests upon public and private agencies for the development of adequate standards of service.

Apportionment of financial responsibility between public and private agencies should be considered in relation to the whole child welfare program. Adequate financial support should be secured for both public and private agencies in order to make possible the development and maintenance of acceptable standards.

Public and private child welfare organizations have the common task of securing for every child in need of service his rights to the closest possible approximation of normal home life, to religious and moral training, to understanding and guarding of his personality, and to opportunities for health protection, education and recreation.

CRIME CONTROL *

By Edgar M. Gerlach

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CRIMINAL STATISTICS

The administration of criminal justice in the United States continued through 1937 to be the center of widespread interest and concern. Assertions and counter-assertions are continually being made about the amount of crime and the efficiency or inefficiency of law enforcement agencies. The constant use of "figures," quoted in support of these varied assertions, shows the dependence that necessarily exists upon criminal statistics for a knowledge of even the primary facts of the crime problem.

Nationwide criminal statistics are collected by three different Federal agencies, each of which works in a particular field. The Federal Bureau of Investigation collects statistics from police departments in approximately 2,500 cities having a population of some 66,000,000. The Bureau of Prisons of the Department of Justice collects data on the prosecution, trial, and disposition of criminal cases in the Federal Courts; and regarding persons granted probation by these Courts, incarcerated in Federal penal and correctional institutions, or released on parole from same. The Bureau of the Census of the Department of Commerce collects penal and correctional statistics from the 48 States and in addition is developing its program for collecting judicial criminal statistics from non-Federal courts. Statistics are now available regarding the disposition of cases in courts of general criminal jurisdiction in 30 States and are published in an annual report entitled "Judicial Criminal Statistics."

PRISONS

The outstanding prison problem in America in 1937 continued to be that of providing work for idle prisoners. Since the effective date of the Hawes-Cooper Act, making prison products subject to state laws on arrival at destination (Jan. 19, 1934), and the passage of the Sumners-Ashhurst Act in July, 1935, prohibiting the shipment of prison products in interstate

* Among his colleagues in government service to whom the author is indebted for valuable contributions to this article are: Myrl Alexander, Ronald H. Beattie, Howard B. Gill, Ralph J. La Vallee, Bennett Mead and Eugene S. Zemans.

commerce in violation of state laws and requiring prison products to be so labelled in interstate commerce, industrial prisons of the north, east and west have lost most of their industries. It is estimated that the total value of products manufactured in American state prisons in 1937, exclusive of agricultural and extractive industries, did not exceed $20,000,000, of which about half of the products were sold on the open market, as compared with a total of approximately $62,000,000 worth manufactured in 1932, of which nearly $28,000,000 were sold on the open market.

The Supreme Court upheld the constitutionality of the Hawes-Cooper Act on March 2, 1936 (*Whitfield* v. *State of Ohio, No. 377 Oct. Term, 1935*) and of the Sumners-Ashhurst Act on Jan. 4, 1937 (*Kentucky Whip & Collar Co.* v. *Illinois Central Railroad Co.* No. 138 Oct. Term, 1936). The significance of these decisions lies in two conclusions. First, they have finally settled a problem which has troubled prison officials and free industry for 125 years, *viz:* what to do about the competition of prison products and free products. The Supreme Court in these decisions declared such competition on the open market to be "an evil." Second, by supporting the States in legislation restricting prison industries, they have greatly reduced industry in the prisons and practically eliminated the Industrial Prison.

On Jan. 1, 1937, 25 States prohibited or seriously restricted the production of articles by prisoners for sale on the open market. At the close of the year, the number had increased to 33, and prison industries in some States had come to a standstill with thousands of idle prisoners milling aimlessly about in prison corridors or yards. White prison riots seldom arise from idleness alone; such lack of work offers opportunity for individual groups to get together and plot mischief. There has accordingly been an increase in daring attempts on the part of small groups to capture prison officers as hostages in attempts to escape or otherwise to create trouble within the prisons. In a desperate attempt to meet the situation, prison officials have installed home-made bowling alleys, pool tables, and other recreational devices in empty factory buildings, developed "hobby" shops, and set-up daytime educational classes with the help of W.P.A. workers.

To assist the States in their present situation, the Federal Government established the Prison Industries Reorganization Administration in 1935 and up to Dec. 31, 1937, the PIRA made studies and issued reports on the prison program of 12 States—Vermont, Maryland, Delaware, West Virginia, Virginia, Georgia, Texas, Arkansas, Oklahoma, Tennessee, Kentucky, and California. Other studies are under way in Oregon, Wyoming, Nebraska, Kansas, New Mexico, Indiana, Missouri, District of Columbia.

Of special interest to prisons in 1937, was the Survey of Release Procedures undertaken by the Attorney-General which included a survey of all state prisons. The results of this survey, however, will not be available until the fall of 1938.

FEDERAL PRISON INDUSTRIES

For a period of two and one-half years ended Dec. 31, 1937, industries in Federal penal and correctional institutions were operated by the Federal Prison Industries Corporation. In addition to continuing the variation of industrial output, the Board expanded employment opportunities in an effort to alleviate idleness of inmates as much as possible. For 1937, there was an average of 2,708 inmates employed out of a total of 14,819, or approximately 18.3%. Also, emphasis continued to be placed on the importance of correlating closely vocational training activities and the institutions' industrial program. In each of the major institutions, an industrial counsellor was employed as advisor to institutional officials in planning the vocational training and retraining of those prisoners showing the greatest possibilities of rehabilitation. A job analysis was made, covering all jobs in each industry to which prisoners may be assigned; this information was made available to

the warden and the classification committee as a basis of determining the assignments best suited to each prisoner's needs.

STATE PROBATION SERVICE

Michigan.—Through the active sponsorship of Governor Murphy, supported by the leaders in correctional work, very important legislation affecting the development of adult probation and parole was enacted in Michigan. A State Department of Corrections was created with the Director of Corrections as executive officer and three bureaus, each in charge of an assistant director—probation, pardons and parole, and prisons. The functions of the Bureau of Probation are to appoint and supervise probation officers in all adult courts of importance except in Detroit. The law provides for the granting of state subsidies or grants-in-aid to counties unable to maintain probation service according to the standards set by the new bureau.

Missouri.—In May the legislature of Missouri enacted a law creating a State Board of Probation and Parole of three salaried members, one of whom is the lieutenant-governor of the State. The Board appointed as executive secretary the former chief probation officer of the juvenile court of Saint Joseph. The Board is empowered to appoint probation-parole officers to serve in the circuit and criminal courts throughout the State. Such courts were empowered for the first time by the act to place defendants on probation.

New Hampshire. —The New Hampshire Legislation passed an act in the spring of 1937 creating a State Board of Probation of three unpaid members with power to supervise probation in all courts and to appoint a state director and four paid probation officers. The same act gave, for the first time in New Hampshire, full discretion to all adult courts to use probation. The act also made it mandatory upon all municipal courts in towns of 5,000 or over to appoint one or more qualified probation officers, and permissive for other courts to do so, these officers being subject to the supervision of the state board and holding office during the pleasure of the board. A juvenile court law was also passed by the same Legislature conforming in its general provisions to the Standard Juvenile Court Law.

North Carolina.—Previously without adult probation service, the legislature of North Carolina adopted by a unanimous vote in both houses a statewide adult probation law. The law follows closely the model provisions recommended by the National Probation Association. It authorizes the use of probation in courts of record for all offenses except capital ones; it has model provisions for investigation and treatment of probation; it provides centralized administration through a state probation commission of five members appointed by the Governor. The commission selects a state director of probation. Probation officers to serve in district courts throughout the State are appointed by the director with the approval of the commission. It is contemplated that there shall be at least one probation officer in each judicial district.

Tennessee.—By a recent act of the Tennessee Legislature a new department, the State Division of Pardons, Parole and Probation, was created with a provision for a director and field staff to administer adult probation and parole. The new division functions under the State Department of Institutions and Public Welfare.

Utah.—A bill was enacted creating a department of adult probation and adult parole in the State Board of Corrections of Utah. The Board appoints a chief adult parole and probation agent, and probation agents to serve in districts throughout the State. Utah has previously had an adult law but no probation officers.

West Virginia.—The combination of juvenile probation and parole in a state set-up was recently established in West Virginia, a new departure in state administration. Under this act county directors of public assistance are *ex officio* probation officers of the juvenile court and of the county.

The Director of Juvenile Probation and Parole is under the State Department of Public Assistance.

FEDERAL PROBATION SERVICE

An increasing appreciation of the value of the Probation System to the United States Courts is reflected in the statistics for the fiscal year 1937. A total of 34,650 probationers were under supervision during the year. Probation officers, in addition to serving the courts, also serve the United States Board of Parole as field representatives. In this capacity they were responsible for 4,806 parolees and 8,173 conditional release cases. There were 14,126 investigations made in determining the suitability of probation as a form of treatment for convicted defendants and 38,834 other investigations.

The fiscal year 1937 saw the addition of 29 probation officers to the System. The total number, as of Dec. 30, 1937, was 173. The average case load per officer on June 30 included 149.3 probationers, 13.8 parolees, and 11.6 conditional release cases, or a total of 174.6.

The U. S. Probation System has passed through two stages of development since the enactment of the probation statute in 1925. The first of these, 1925–30, was one of very slow development, with a total of only eight probation officers appointed up to June 30, 1930. There were no probation clerks. The second period, which began when the centralized System was established in 1930, has been one of rapid expansion. All except four of the judicial districts had probation service on Dec. 30, 1937. The number of probation officers has increased from eight to 173. The supervision of Federal parolees and conditional release cases has been an extra duty of the probation officer since 1930.

Encouraging progress in the growth of the System marks the past seven years. The year 1937 marked the beginning of a period of intensifying and refinement of the work begun. Improvements in methods of personnel selection, more adequate staffing of the various units, increased efficiency in the supervision of the work of the System, improvement in the quality of case work through such supervision, and inauguration of a system of in-service training are included among the objectives.

PROBATION IN GENERAL

The National Probation Association reported: "The year 1937 has been one of significant progress in the development of probation and in the work of the Association. We have seen a marked increase of interest all over the country in extending the service and above all, securing better trained, better qualified probation personnel. Training and experience are now required for appointment in many localities. Examinations, given with the assistance of the staff of the Association, were held in several new localities this year and the States which have had such tests before have raised their standards. Following surveys and campaigns for improved probation laws, new and important legislation was enacted in a dozen States this year. Seven States for the first time provided state departments or bureaus with probation officers paid from state funds. In five of these States the probation system was extended for the first time to those above juvenile court age. There are now only nine States in the Union without adult probation laws."

At a meeting of juvenile court judges in Atlantic City in 1936, an organization committee of those judges was voted and a meeting was held on May 22 concurrently with the sessions of the National Probation Conference. The chairman of the meeting called attention to the work of the local judges' associations already in existence and of their help in legislation and otherwise. The report of the committee recommended the formation of an independent association of juvenile court judges which would co-operate with the National Probation Association and with other organizations, the judges' group to have its own officers, fix the time and place of its meetings, and engage in whatever activities are

proper to the advancement of the juvenile court movement. The Association elected four officers.

PAROLE

A crime conference called by the Attorney General of the United States in December, 1934, stimulated activity in all related fields including parole. Many States held similar conferences with results already apparent in productive legislation and co-operative relations.

The Attorney General's Conference on Crime recommended the continued use of parole as the safest method of release from prison, but under the following minimum conditions: (1) minimum and maximum of indeterminate sentences should be compatible with adequate punishment, rehabilitation and public welfare and protection; (2) paroles should be granted only by a full time salaried board of duly qualified persons; (3) full information should be available and sought for the use of the Board as to the prisoners' records, habits, environment, family and prospect; (4) names of all persons endorsing a prisoner for parole should be made public on request of the press or any responsible person or organization; (5) no parole should be granted except where adequate employment and rigid supervision are provided; (6) adequate appropriations must be provided for obtaining requisite data and furnishing necessary supervision; (7) one parole office should not be expected to supervise more than a number to whom he can give adequate attention; (8) no political or other improper influence shall be tolerated; (9) machinery should be provided for the prompt revocation of any parole when continuance at liberty is not in the public interest.

One of the most significant developments has been a getting away from the tendency to consider criminal investigation, or probation, or institutional treatment, or parole, as separate activities, each operating more or less in a vacuum independently of the others. During the year there was an intensified approach to a unified and correlated program of crime control of which program parole is an integral part.

In September the governors of some 25 States signed an interstate compact to give mutual supervision to parolees of the signatory States and provided means for prompt return of violators to the paroling State. The widely varying parole standards in the several States, however, are considered by most parole authorities to make such a compact impracticable until high and acceptable parole standards shall have been established by all States joining the compact.

Parole procedures have in general withstood the critical debates and investigations of the year. In fact the parole situation as a whole has been strengthened. Missouri, as an example, is establishing a well organized parole system. Throughout the country as a whole parole systems have strengthened selection procedures and have taken definite steps to improve parole supervision.

JUVENILE DELINQUENCY

There has been an increasing interest shown in the need for development of community planning for prevention and treatment of juvenile delinquency by lay groups and various civic organizations, and the subject is one widely discussed by such groups. The American Legion, through its National Child Welfare Committee, held regional conferences during 1937 with programs devoted to the discussion of the subject in order to stimulate local interest.

The movement for organized community planning under the program popularly known as the Co-ordinating Council plan continued to grow through 1936 and 1937. Two national conferences of representatives of Co-ordinating Councils and others interested in the movement have been held, the first in May 1936 and the second in May 1937 in conjunction with the annual conference of the National Probation Association and the National Conference of Social Work. These meetings signify the achievement of a degree of National coherence in the movement.

Under the auspices of the National Probation Association, studies of the

co-ordinating council movement were carried on over a period of a year and a half, beginning in 1935. A roster from available material as of Aug. 1, 1936 showed over 250 councils or similar organizations under varying names in at least twenty different States.

The National Committee on Community Co-ordination continues to function. This Committee is composed of volunteer membership of representatives from national organizations in the field of social work, education, religion and Federal bureaus; civic organizations, local community councils and representatives of the general public. Originally appointed by the Attorney General's Conference on crime, later sponsored by the National Probation Association, and since April, 1937, a Committee of the National Social Work Council, its function is that of studying and developing methods of bringing about community co-ordination.

In the administration of the Child Welfare Services under the Social Security Act, the Federal Government is giving assistance to the States in the development of their public programs for services in behalf of children who are in danger of becoming delinquent. The field of prevention is being broadened through this work so as to include the child in rural districts for whom provision hitherto has been lacking. State Welfare departments are strengthening their staffs to make available the services of qualified workers to assist in better co-ordination and utilization of community resources, especially in rural areas and areas in special need.

SOCIAL SECURITY

The Social Security Act, which became law in 1935, is now benefiting millions of men, women, and children throughout the United States. Nearly 21,000,000 workers are estimated to be in jobs covered by unemployment compensation laws adopted by the 48 States, the District of Columbia, Alaska, and Hawaii. Approximately 37,000,000 men and women in commerce and industry have applied for social security accounts under its old-age insurance provisions. More than 2,000,000 people in need—the aged, the blind, and the dependent children deprived of parental support and in danger of becoming delinquent—are receiving assistance under the state plans for this purpose. The act also affects directly all adults and children whose protection against disabling illness has been strengthened by its public health and welfare services.

The program now going forward under the Social Security Act benefits industry and business generally as well as individuals. To millions of Americans it will bring about a more equitable and more widely distributed income, and, by increasing purchasing power, will bring greater security to both employers and employees. In so far as business depressions increase crime, the Social Security Act, in its attempt to combat economic insecurity, protects the nation as a whole.

HOUSING

By Stewart McDonald

Administrator, Federal Housing Administration

GENERAL

At the end of nearly three and one half years of activity, the Federal Housing Administration has transacted total business amounting to approximately $1,880,000,000. These figures, which include mortgages selected for appraisal, commitments to insure mortgages on large scale rental housing projects, and modernization and repair notes insured prior to April 1, 1937, represent all business transacted up to Oct. 1, 1937.

An analysis of figures on the total volume of loans insured shows that some 300,000 mortgages amounting to $1,284,000,000 have been selected for appraisal. Commitments to insure large scale housing mortgages have been issued on 39 projects, in the

amount of $31,097,000. Approximately 1,450,000 modernization and repair notes totaling $560,000,000 had been insured prior to the expiration of the plan on March 31 last.

The Federal Housing Administration has made definite contributions to the improvement of housing standards and conditions, through its technical and underwriting services. Aid has been given to individual companies, to state and civic authorities in the fields of community and neighborhood planning, and dwelling house design and construction. Greatest contributions have been made, it is believed, in elevating standards for the small house and in stimulating the construction of houses costing less than $5,000 including land.

INSURED MORTGAGE SYSTEM

Of the more than 300,000 individual mortgages totaling $1,280,000,000 which have been selected for appraisal, some 240,000 mortgages amounting to $960,000,000 have been accepted for insurance. Cases are being accepted for insurance at the rate of approximately 2,500 per week, and it was estimated in November, 1937 that the value of mortgages accepted for insurance had passed the $1,000,000,000 mark.

It should be remembered that the business on the books of the Federal Housing Administration does not represent advances of funds to the public. The Federal Housing Administration is an insurance agency, insuring private lending institutions against loss on funds advanced for the buying, building or refinancing of homes. It also protects lending agencies against loss on sums advanced for large scale rental housing projects.

Protection is afforded by the Mutual Mortgage Insurance fund which was established with an original grant of $10,000,000 by the Congress and had reached a total of $20,000,000 on Aug. 31, 1937. Revenue for the fund is received from the appraisal fees charged on each mortgage submitted for valuation, and the annual mortgage insurance premiums paid by each mortgagor obtaining insurance of his mortgage.

Funds from these two sources late in 1937 were being received at the rate of approximately $600,000 per month. While a part of the current revenue is being used to defray current operating expenses, as will be explained in a later section, the fund is increasing steadily. Experience seems to demonstrate that it should prove adequate to meet the demands made upon it in coming years.

At the end of September, 1937, only 37 of the more than 237,000 properties covered by mortgages accepted for insurance had been conveyed to the Administration following foreclosure proceedings by the mortgagee concerned. Debentures issued by the Federal Housing Administration in exchange for the properties amount to $156,869. It should be noted that debentures cannot be considered as a total loss to the Fund, since the retirement of debentures is covered, in whole or in part, by funds received from the sale of properties. Of the 37 properties conveyed to the Federal Housing Administration, a total of 19 have been sold at a total net loss to the fund of only $8,748.

The Federal Housing Administration has established the policy of retiring debentures as soon as funds are available from the sale of properties. To date debentures on 10 properties, amounting to $44,988, have been retired and debentures on nine additional properties, amounting to $37,878, have been authorized for retirement, leaving net debentures outstanding of $74,002.

UNDERWRITING AND TECHNICAL ACHIEVEMENTS

In its mortgage insurance activities, the Federal Housing Administration has adhered closely to the objective of improving housing standards and conditions. While every effort has been made to handle expeditiously the more than 300,000 cases submitted for appraisal, quality has not been sacrificed to quantity and speed has not brought the lowering of standards. The Federal Housing Administration's technical and underwriting techniques have influenced the mortgage lending structure

of the entire country. The program has resulted, on the one hand, in the standardization and rationalization of many mortgage lending practices, and, on the other hand, in a leavening of construction and neighborhood standards. This influence is particularly noticeable in those centers where construction has again assumed volume proportions. The valuation and risk rating techniques of the Administration have influenced mortgage lending even in cases where loans are not submitted for insurance. The Administration is handling only a part of the total mortgage business of the country but its influence extends to a large proportion of all mortgage transactions, due to the recognition, both by the mortgage lending institutions and the buying public, of the importance of the innovations which have been made and of the greater safeguards offered.

Of primary importance were provisions against the acceptance of loans secured by "jerry built" structures. The first stages of any period of building recovery are generally characterized by the most flagrant violations of good construction practice. In other words, in periods when building activity increases rapidly in order to meet the pent-up demand for new accommodations, "jerry building" and other forms of poor construction practice are most likely to appear. Property standards were set up by the Underwriting and Technical Division and a system of compliance inspections was devised to assure the strict adherence of properties to the standards created.

Both to ensure the prompt handling of new construction and to further inform builders as to the type of construction required, the Federal Housing Administration has prepared localized minimum construction requirements for each of its major insuring offices which receive a large number of new construction cases. It has been proved in practice that the establishment of minimum construction requirements has resulted in the improvement of construction standards in those States to which they have been applied. The establishment of a minimum to which all houses must conform has resulted in the raising of sub-standard construction to and above the minimums set up. It has also been a means of demonstrating to reputable builders the advantages of building with the highest standards in mind.

The risk rating and valuation systems are flexible, allowing the acceptance of loans for the full 80 per cent of the value of the properties only in cases where the structure of the house and other features of the loan can be given a high rating. Equally, it allows insuring offices to reduce the amount of the loan accepted as a "penalty" for poor construction standards which just meet with the minimums set up. The careful and fair application of these two features has enabled the Administration to make definite gains in standards for small houses costing $5,000 or less. This was the field in which the "jerry builder" formerly flourished. By demonstrating ways in which increased efficiency can be combined with better construction practices, the Federal Housing Administration has been able to show many builders how they can construct good small houses which are acceptable to the Administration and readily salable to the public at reasonable prices. The results of this activity are reflected in the 64 per cent increase in the number of new construction cases accepted for insurance during the first six months of 1937 as compared with last year. This increase in number was accompanied by a decrease in the average value of new construction cases accepted, from $4,893 to $4,613, a decrease of $280. In view of the general tendency toward higher prices and costs in the construction field this decrease in the average mortgage is significant.

To check the tendency toward overbuying and over-borrowing which, during the last "boom," led many families to buy houses and borrow amounts not justified by their incomes, the Federal Housing Administration has developed borrower rating techniques which are being strictly

applied. Perhaps no other part of the underwriting technique has been so rigidly enforced. Unless families are able not only to make the down payment necessary but also to show ability to meet monthly payments easily the loan may be and is rejected. Under the Insured Mortgage System, such care is used in evaluating the capacity of the borrower to pay that there should be no widespread repetition of the abuses which grew up under the more haphazard methods of mortgage lending. Overbuying and over-borrowing have been reduced to a minimum.

In still another field the Administration has made a much needed contribution. Land speculation and the premature subdivision of outlying areas was one of the characteristics of the last building boom. To such lengths did this fever of land speculation progress that in many cities the stock of residential building lots on hand at the end of the depression was large enough to supply the normal demands for population growth for the next three or four decades. To check the growth of land speculation tendencies, the Federal Housing Administration has developed neighborhood rating procedures and has undertaken to examine carefully the structure of every new or existing subdivision in which it is requested to insure a mortgage loan. Loans can be and are rejected where it is believed the neighborhood does not offer the facilities for comfortable, healthy and convenient living conditions over a long period of time.

Since the Administration is charged with encouraging improvements in housing standards and conditions, it has taken a constructive policy with regard to subdivisions. Owners of sub-standard neighborhoods are given the opportunity to make improvements in their projects, following out suggestions and advice given by the land planning experts employed by the Administration. Where owners have been able to impose proper deed restrictions, bring their projects into conformity with the city plan, make provisions for conformance to zoning ordinances, provide for cheap and adequate transportation to shopping, educational and commercial centers, and, in general, to bring their projects up to the standards recognized by land planners to be sound, the Administration signifies its approval by undertaking the insurance of loans in the subdivision. This policy has resulted in the salvaging of many subdivisions which were partially blighted as a result of the last depression. It has also done much to check the premature subdivision of land, and to aid developers of new subdivisions to establish their projects upon a sound basis.

RENTAL HOUSING PROGRAM

In the insurance of mortgages on one- to four-family houses, that part of the program discussed above, the Federal Housing Administration is concerned with making home ownership possible for those individuals fortunate enough to be able to own their own homes. In the insurance of mortgages on rental housing projects, however, the Administration is engaged in making better accommodations available to the large group of citizens who are unable or do not desire to undertake home ownership.

Any discussion of the Rental Housing Program of the Administration should be prefaced by a statement as to the difference between the Federal Housing Administration and the United States Housing Authority, created by the passage of the Wagner-Steagall Act. Despite the similarity of their names, the two agencies are separate and distinct in their aims, objectives and powers. They represent two phases of a vast problem. The Federal Housing Administration makes no loans or grants of public money. It functions as an insurance agency, both in its rental housing program and in the insurance of mortgages on one- to four-family houses. On the other hand, the United States Housing Authority will give financial assistance to States and political subdivisions thereof interested in constructing housing projects. Another difference which should be noted is the fact that the United

States Housing Authority will deal with the elimination of slums and other unsafe and insanitary housing conditions. It will provide housing for groups of persons for whom private industry and initiative cannot provide suitable housing.

The Federal Housing Administration's large scale rental housing program, on the contrary, is based entirely upon the encouragement of private initiative. By insuring mortgages on privately financed projects, the Administration is encouraging long term investment to return again to the field of large scale housing financing.

On Nov. 1, 1937, the Rental Housing Division of the Federal Housing Administration had issued commitments to insure mortgages totaling $31,097,000 on 39 large scale rental housing projects. These projects have a total capitalization of $40,278,000. Nine of these projects are completed and in operation, 11 are under construction, financial arrangements have been completed for four additional projects and, in addition, commitments are outstanding on 15 projects. The division has 16 additional projects under consideration at the present time.

The nine completed projects are capitalized at $8,500,000 with insured mortgages of $6,521,000. The 11 projects under construction are capitalized at $11,080,000 and mortgages amounting to $8,445,000 will be insured when the projects are completed. Four other projects, on which mortgages of $1,716,000 have been approved for insurance, will be placed in construction shortly. Commitments to insure mortgages are outstanding on 15 projects, representing insured mortgages of $14,415,000. One of the completed projects, involving a mortgage of $1,150,000, has been refinanced and is not now insured by the Federal Housing Administration. When all are completed, the 39 projects will provide accommodations for some 9,000 families. Already, accommodations for 1,812 families have been made available in the nine completed projects. Structures under construction will house some 2 325 families.

Mortgage funds have been obtained by the sponsors from large lending institutions operating on a national scale in most instances. In the case of two projects, however, financing has been obtained by means of bond issues subscribed to by groups of local banks. Pending acceptance by private lending institutions, the RFC Mortgage Company has taken mortgages amounting to $1,625,000.

To obtain the protection offered by the Federal Housing Administration, lenders and sponsors of projects must accept certain conditions. The housing corporations are limited as to dividends to be paid and are subject to Federal Housing Administration regulation while the insurance is in effect. Each application received by the Rental Housing Division is examined, in the first instance, to determine the need for the project, the type of facilities which it will afford, the suitability of land to the type of buildings planned, the soundness of the construction and other matters. Next the economic soundness is tested by a comparison of possible income and operating expense. The division prepares rental schedules and outlines probable operating costs, taxes, carrying charges, etc.

Projects proving to be sound and for which financing can be arranged by the sponsors, are accepted for insurance. During the course of construction the Administration exercises careful supervision and as the work progresses checks each stage and certifies all payments to contractors. When the project is in operation, accounts and records of the housing corporation are checked, and a representative of the Administrator sits as a member of the board of directors to assure the fulfillment of the terms and conditions of the mortgage insurance contract.

Under the Rental Housing Program of the Federal Housing Administration, private capital is again finding the large scale housing field a profitable and safe outlet for the investment of long term funds. That this attitude prevails is evidenced by the fact that some of the largest insurance companies of the country are

now investing funds in rental housing projects on which the Federal Housing Administration has insured the first mortgage.

MODERNIZATION LOAN INSURANCE

While those sections of the National Housing Act which related to the insurance of short-term modernization loans were allowed to lapse on April 1, 1937, there are certain facts, with regard to this portion of the Program, which should be stressed.

At the time of the passage of the National Housing Act, in June 1934, less than 150 lending institutions in the entire country were making any kind of personal-credit or character loans. On March 31, 1937, some 6,419 institutions were making character loans, under the Federal Housing Administration's program. More than 1,450,000 such loans amounting to approximately $560,000,000 had been placed upon the books of the Administration when the plan expired.

In spite of the withdrawal of the government guarantee, some 2,300 institutions are still making character loans for the improvement or repair of homes. In New York State alone there are 260 institutions, many of which have numerous branches throughout the State. In each of the other States institutions are engaged in this type of financing, making available to the home owners a type of financial aid which was available in only a few instances prior to the Modernization Credit Plan. It has also been learned that some 84 institutions adopted loan plans closely resembling the Modernization Credit Plan without taking advantage of the government insurance.

The great interest shown by lending institutions in the personal loan field is doubtless the result of the experience of the Federal Housing Administration with this new form of financing. Out of a total of $560,000,000 in loans insured, claims reported and paid, less collections and claims reinstated, amounted to approximately $6,000,000 as of Aug. 1, or 1.1 per cent of the total loans insured.

While there will be additional claims and losses, it is believed that when the program is finally completed, approximately $75,000,000 of the $100,000,000 fund provided for the payment of losses will remain in the United States Treasury. It should be remembered that the original fund made available was $200,000,000. After a period of experiment with the plan, the Federal Housing Administrator requested that the size of the fund be reduced by one half and that the government guarantee be reduced from 20 per cent to 10 per cent of the total amount of loans insured.

FINANCIAL DETAILS

The total cost of the Administration's program to the taxpayers of the country, up to Oct. 1, 1937, has been approximately $30,000,000, not including losses paid on modernization credit loans. The budget for the present year calls for expenditures of only $8,500,000.

On Aug. 1, 1937, the Federal Housing Administration was able to announce that it would, in future, be able to pay the major portion of its own expenses. During the present fiscal year, it will undertake to pay the costs of operation of its 60-odd field insuring offices. These costs amount to approximately $5,000,000. As was pointed out, income is being received from appraisal fees and mortgage insurance premiums at the rate of approximately $600,000 per month. This will allow the Administration to pay field office expenses, and at the same time make it possible for the Mutual Mortgage Insurance Fund to be further augmented against future claims.

The Federal Housing Administration has been able to assume so large a part of its own expenses for two main reasons. First, the non-income producing phases of the program were allowed to lapse on April 1, 1937, making it possible for reductions to be made in operating expenses. Second, the rapid increase in the volume of income-producing mortgage insurance business has placed the Mutual Mortgage Insurance Fund in a sound condition.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

JUSTICE AND MAINTENANCE OF ORDER

American Bar Assn., Section on Criminal Law, Endicott Bldg., St. Paul, Minn.

American Civil Liberties Union, 31 Union Sq., New York City.

American Council of Learned Societies, 597 Fifth Ave., New York City.

American Institute of Criminal Law and Criminology, 357 E. Chicago Ave., Chicago, Ill.

American Law Institute, 3400 Chestnut Street, Philadelphia, Pa.

American Prison Assn. of N.Y., 135 E. 15th St., New York City.

National Committee on Prisons and Prison Labor, 250 W. 57th Street, New York City.

National Crime Commission, 73 Tremont St., Boston, Mass.

National Police Conference, 240 Centre St., New York City.

National Probation Assn., Inc., 50 West 50th St., New York City.

National Society of Penal Information, 114 E. 30th St., New York City.

Society for the Prevention of Crime, 270 Broadway, New York City.

Women's Prison Assn., 110 Second Ave., New York City.

SOCIAL ORGANIZATIONS

American Political Science Association, 205 Bennett Hall, University of Pennsylvania, Philadelphia, Pa.

American National Red Cross, 17th between D and E Sts., Washington, D.C.

American Seamen's Friend Society, 72 Wall Street, New York City.

American Society for the Prevention of Cruelty to Animals, 50 Madison Ave., New York City.

Boys' Clubs of America, Inc., 381 Fourth Ave., New York City.

Boy Scouts of America, 2 Park Ave., New York City.

Children's Aid Society, 105 E. 22nd St., New York City.

Civic Forum, 123 W. 43rd St., New York City.

Federal Council of the Churches of Christ in America—Commission on the Church and Social Service, 297 Fourth Ave., New York City.

Girls' Friendly Society of the U.S.A., 386 Fourth Avenue, New York City.

Girls' Service League of America, 138 E. 19th St., New York City.

Humane Society of New York, 313 East 58th St., New York City.

National Catholic Welfare Conference, 1312 Massachusetts Ave., N.W., Washington, D.C.

National Social Work Council, 50 West 50th St., New York City.

Young Men's Christian Assn., International Committee, 347 Madison Ave., New York City.

Young Women's Christian Association, 600 Lexington Ave., New York City.

SOCIAL FRATERNITIES

Benevolent and Protective Order of Elks of the U.S.A., 2750 Lake View Ave., Chicago, Ill.

International Assn. of Lions Clubs, 350 McCormick Building, Chicago, Ill.

Kiwanis International, 520 N. Michigan Ave., Chicago, Ill.

Knights of Columbus, 45 Wall St., New Haven, Conn.

Knights of the Ku Klux Klan, Inc., P. O. Box 1204, Atlanta, Georgia.

Knights of Pythias, 1054 Security Building, Minneapolis, Minn.

Loyal Order of Moose, Mooseheart, Ill. (Supreme Lodge of the World).

Modern Woodmen of America, 1504 Third Ave., Rock Island, Ill.

Rotary International, 35 East Wacker Drive, Chicago, Ill.

Soverign Grand Lodge of the Independent Order of Odd Fellows, 16 West Chase St., Baltimore, Md.

Supreme Council of the Royal Arcanum, 407 Shawmut Ave., Boston, Mass.

Supreme Council, 33° Ancient & Accepted Scottish Rite.—Northern Jurisdiction, 117 Statler Building, Boston, Mass.—Southern Jurisdiction, 1733 16th St., N.W., Washington, D.C.

Woodmen of the World, Sovereign Camp, 17th and Farman Sts., Omaha, Nebraska.

(SOCIAL) HOME LIFE

Landlords' Co-operative Assn., 18 E. 41st St., New York City.

National Housing Assn., 105 E. 22nd St., New York City.

National Plant, Flower & Fruit Guild, 1192 Sixth Ave., New York City.

New York Assn. for Improving the Conditions of the Poor, 105 E. 22nd St., New York City.

(SOCIAL) CHILDREN

Big Brother and Big Sister Federation, Inc., 425 Fourth Ave., New York City.

Big Brother Movement, Inc., 315 Fourth Ave., New York City.

Camp Fire Girls, Inc., 41 Union Square, New York City.

Child Conservation League of America, 318 W. Washington St., Chicago, Ill.

Child Welfare League of America, 130 E. 22nd St., New York City.

Children's Aid Society, 105 E. 22nd St., New York City.

Hebrew Sheltering and Immigrant Aid Society, 425 Lafayette St., New York City.

National Child Labor Committee, 419 Fourth Ave., New York City.

National Child Welfare Assn., 70 Fifth Ave., New York City.

(SOCIAL) HEALTH

American Assn. of Social Workers, 130 E. 22nd St., New York City.

American Birth Control League, 515 Madison Ave., New York City.

American Child Health Assn., 50 West 50th St., New York City.

American Foundation for the Blind, Inc., 15 West 16th Street, New York City.

American Humane Assn., 50 Madison Ave., New York City.

American Mission to Lepers, 156 Fifth Ave., New York City.

American Social Hygiene Assn., Inc., 50 West 50th St., New York City.

Anti-Profanity League, Ware, Mass.

Better Films, National Council, 70 Fifth Ave., New York City.

Charity Organization Society of the City of New York, 105 E. 22nd St., New York City.

Chicago Crime Commission, 300 W. Adams St., Chicago, Ill.

Cremation Assn. Co. of N.Y., 181 W. 238th St., New York City.

Eugenics Research Assn., Cold Spring Harbor, L.I., N.Y.

National Committee for Mental Hygiene, 50 West 50th St., New York City.

National Health Council, 50 West 50th St., New York City.

National Housing Assn., 105 E. 22nd St., New York City.

National Recreation Assn., 315 Fourth Avenue, New York City.

National Save-A-Life League, Inc., 299 Madison Ave., New York City.

New York Society for the Suppression of Vice, 215 W. 22nd St., New York City.

Non-Smokers' Protection League of America, 101 W. 72nd St., New York City.

Travelers' Aid Society of N.Y., 144 E. 44th St., New York City.

(SOCIAL) TEMPERANCE

Anti-Saloon League of America, 150 Fifth Ave., New York City.

National Temperance Society, 289 Fourth Ave., New York City.

World Narcotic Defense Assn., 578 Madison Ave., New York City.

FOUNDATIONS

Carnegie Endowment for International Peace, 405 West 117th St., New York City.

Carnegie Foundation, 522 Fifth Ave., New York City.

Carnegie Hero Fund Commission, 2307 Oliver Building, Pittsburgh, Pa.

CARNEGIE INSTITUTION OF WASHINGTON, 16th and P Sts., N.W., Washington, D.C.

GENERAL EDUCATION BOARD, 49 W. 49th Street, New York City.

GUGGENHEIM FOUNDATION, 551 Fifth Ave., New York City.

HALL OF FAME FOR GREAT AMERICANS, New York University, University Heights, New York City.

MORO EDUCATIONAL FOUNDATION, 475 Fifth Ave., New York City.

ROCKEFELLER FOUNDATION, 49 W. 49th Street, New York City.

ROCKEFELLER INSTITUTE, York Ave. and 66th St., New York City.

ROOSEVELT MEMORIAL ASSN., 28 E. 20th St., New York City.

RUSSELL SAGE FOUNDATION, 130 E. 22nd St., New York City.

WOODROW WILSON FOUNDATION, 8 West 40th St., New York City.

WOMEN'S WORK AND PROGRESS

AMERICAN ASSN. OF UNIVERSITY WOMEN, 1634 I St., N.W., Washington, D.C.

AMERICAN NURSES' ASSN., 50 West 50th St., New York City.

AMERICAN WOMEN'S ASSN., INC., 353 W. 57th Street, New York City.

GENERAL FEDERATION OF WOMEN'S CLUBS, 1734 N St., N.W., Washington, D.C.

GIRLS SERVICE LEAGUE OF AMERICA, 138 East 19th St., New York City.

NATIONAL AMERICAN WOMAN SUFFRAGE ASSN., Grand Central Terminal, New York City.

NATIONAL ASSOCIATION OF WOMEN PAINTERS AND SCULPTORS, 42 W. 57th St., New York City.

NATIONAL COUNCIL OF WOMEN, U.S.A., 4 Park Ave., New York City.

NATIONAL LEAGUE OF WOMEN VOTERS, 726 Jackson Place, N.W., Washington, D.C.

NATIONAL WOMAN'S CHRISTIAN TEMPERANCE UNION, 1730 Chicago Ave., Evanston, Ill.

NATIONAL WOMAN'S PARTY, 144 B St., N.E., Washington, D.C.

PROFESSIONAL WOMAN'S LEAGUE, Broadway and 73d Street, New York City.

QUOTA CLUB INTERNATIONAL, INC., 1204 18th St., N.W., Washington, D.C.

SOUTHERN WOMEN'S EDUCATIONAL ALLIANCE, 401 Grace-American Building, Richmond, Va.

WOMEN'S EDUCATIONAL AND INDUSTRIAL UNION, 264 Boylston St., Boston, Mass.

WOMEN'S ROOSEVELT MEMORIAL ASSN., Roosevelt House, 28 E. 20th St., New York City.

WOMEN'S TRADE UNION LEAGUE, 247 Lexington Ave., New York City.

DIVISION XVI

LABOR AND LABOR LEGISLATION

LABOR CONDITIONS

By Isador Lubin

Commissioner of Labor Statistics, Department of Labor

GENERAL

During the first nine months of 1937, industrial and labor conditions, in general, showed steady improvement. Employment as a whole was better than it had been at any time since 1929, and wage rates showed a marked upward tendency. In manufacturing industries as a whole, employment and payrolls exceeded the level of the years 1923–25, which is used by the United States Bureau of Labor Statistics in calculating most of its indexes. There were many labor disputes, and, particularly in the early part of the year, a rather wide use of the "sit down" strike, but there were no very large strikes affecting whole industries such as had occurred in previous years. In October there were indications of a recession in industrial activity and this became sharper in the last two months of the year. The effects of the recession were immediately felt by labor in loss of job opportunities, but it is interesting to note that wage rates were little affected. The year closed on a note of rather grave uncertainty as to how serious the industrial recession would be and how long it would last.

UNEMPLOYMENT REGISTRATION AND PLACEMENT

In November, 1937, the Federal Government undertook a voluntary registration of unemployment known as the National Unemployment Census. This was done in conformity with an act of Congress passed earlier in the year and by a special agency set up for the purpose under the direction of John D. Biggers as administrator. The registration was carried out by the Post Office Department, which, through its country-wide organization distributed registration cards to every known address in the continental United States and also in Alaska and Hawaii. It was requested that these cards be filled out and returned by every person who was totally or partially unemployed at the time of reporting. No information was requested from those who were employed. Supplementing this voluntary reporting, an enumerative test census by house to house canvass was made by Post Office employees over 1,455 widely distributed postal routes covering almost 2,000,000 persons.

The number of persons who reported themselves as totally unemployed (including 2,001,877 emergency workers) in the voluntary registration was 7,822,912. The supplementary house to house canvass indicated that the voluntary census had been 72 per cent complete. Allowing for this variation would give a projected maximum total of 10,870,000 totally unemployed in November, 1937. In addition, 3,209,211 persons registered themselves as only partially employed, but the enumerative test census showed that this figure was only 57 per cent complete.

Placement work by the United States Employment Service resulted in the securing of jobs in private industry for a total of 2,352,512 persons during 1937, as contrasted with a total of 1,509,919 in 1936. Placements

of all kinds, including private, public and relief, totaled 3,640,941 in 1937 and 5,091,122 in 1936, reflecting the decrease in public and relief employment.

GENERAL TREND OF EMPLOYMENT

The first nine months of 1937 showed, in general, a steady improvement in employment conditions, and by September the total number of persons employed (excluding agriculture for which satisfactory data are lacking) was, according to the Bureau of Labor Statistics' estimates, 35,121,000, the highest point reached in any month since 1929. By October, 1937, however, the effects of the business recession were evident, total employment declining very slightly but the decline occurring at a time of year when an improvement was to be expected. By November, the decline was very sharp, some 80,000 persons losing their jobs in the month's period, and by December 675,000 additional had become jobless. This two-month decline of almost 1,500,000 persons in industrial employment was the greatest of any period of similar length of which there is record.

As a result of this decrease during the last part of the year, the total employment in December, 1937 (exclusive of agriculture as before) was estimated as being 33,570,000, as compared with 34,423,000 in December of the previous year, although the average for 1937 was well above the average for 1936. As compared with 1929, estimated employment in December, 1937 was less by about 2,000,000 persons.

TREND OF EMPLOYMENT IN MANUFACTURING

Indexes of manufacturing employment and pay rolls, based on the 3-year period of 1923–25 as 100, were higher in 1937 than in any year since 1929. Following the low level of employment and pay rolls in 1933 an increase occurred in each successive year until a peak of 102.3 in employment and of 105.2 in payrolls was reached in May, 1937. The much lower year-end indexes of 88.5 and 80.9, respectively, were the result of the business recession in the last three months of the year. When the durable and nondurable goods industries of the manufacturing group were segregated the resulting indexes showed that employment in the production of durable goods never increased to the same degree as did that for nondurable goods industries, the highest index for durable goods employment having been 99.9 in May, 1937, and for nondurable goods 107.3 in September. In contrast, payrolls in the durable goods industries increased to an index of 107.5 in May while the high point for the nondurable group was only 103.5 in August. At the end of the year the durable goods industries showed lower indexes of both employment (84.2) and payrolls (77.2) than did the nondurable industries (employment 93.2 and payrolls 85.6).

The peak employment in the Executive Service of the United States Government in 1937 was that of June when 870,262 persons were on the payrolls. Employment furnished by Public Works Administration funds decreased from over 200,000 persons in January to less than 150,000 in October. The same tendency was operative in employment under the Civilian Conservation Corps, the National Youth Administration, and the Works Program.

WAGES

There are available no general averages of wages and hours of labor in all employments combined. For practically all manufacturing industries, however, as also for certain non-manufacturing industries and employments, very good data of this character are presented currently in the reports of the United States Bureau of Labor Statistics.

Substantial increases in wage rates occurred in practically all lines of industry during 1937, and the higher rates were not appreciably affected by the recession in business activity in the latter part of the year. Weekly hours of labor, however, were sharply curtailed because of the widespread work-sharing which accompanied the

decreased business activity, with the result that average weekly earnings were adversely affected.

For manufacturing as a whole the average hourly earnings in November, 1937 (the latest month for which data are available) were 66.7 cents as against 58 cents in November, 1936, an increase of 15.2 per cent. Because of reduced hours, however, average weekly earnings were substantially the same in November, 1937, $23.92, as they had been a year previously.

The increases in hourly earnings were particularly noteworthy in the iron and steel industry, the average in November, 1937 having been 76.3 cents as against 63.2 cents in the corresponding month of the previous year. The automobile industry, with average hourly earnings of 91.3 cents in November, 1937 showed an increase of 18 per cent during the 12-month period. Petroleum refining, with average hourly earnings of 97 cents in November, 1937 had the highest average of any major manufacturing industry, and it also showed a very high rate of increase, almost 18 per cent, as compared with the corresponding month of the preceding year.

Indeed, not a single one of the 89 manufacturing industries covered in the Bureau of Labor Statistics monthly reports failed to show a gain in hourly earnings between November, 1936 and November, 1937, and this was also true for all of the 16 non-manufacturing industries covered by the Bureau. The employment, however, was not in equal amount for all the 16 industries. The greatest increase, 13.2 per cent, was in building construction, this increase bringing average hourly earnings in the industry to 91.6 cents in November, 1937. A notable increase of 12.3 per cent over the year in the average hourly earnings of anthracite miners was the result of a new wage agreement which, in May, 1937, caused that industry to go on the 7-hour day with the same rates for day workers as were previously paid for eight hours' work. Retail trades, normally less responsive to wage changes than productive industry, experienced an 8.9 per cent increase in hourly earnings over the year, the average thereby being brought to 55.9 cents in November, 1937.

GEOGRAPHICAL VARIATIONS IN WAGES

A notable characteristic of the wage structure in the United States is the great variation in wage rates by geographical location. This is very well shown in the surveys of the U. S. Bureau of Labor Statistics regarding the entrance wage rates of adult male common laborers. These surveys are made annually in the month of July. The report for 1937 showed that the entrance wage rates for this type of labor increased by 18.5 per cent between 1936 and 1937 for the country as a whole, or from 43.2 to 51.2 cents. In both years the surveys covered 20 industries. The 1937 study included returns for 222,555 workers in 16 manufacturing industries, three public utilities, and building construction. Rates reported ranged from a low of 12.5 cents to a high of $1.10 per hour, depending upon such factors as geographical location, size of city, color of workers, and industry. The great majority of the workers covered (81.6 per cent) were paid 37.5 and under 67.5 cents per hour; 12.4 per cent received less than 37.5 cents; and 6 per cent 67.5 cents and over.

Wages in the north and west varied considerably, from an average of 49.5 cents in the New England States to 58.6 in the Pacific States, but on the whole tended to be higher than in the southern part of the United States where the range was from 37.3 cents for the East South Central States to 40.8 cents for the South Atlantic States. If the southern averages are broken down by States the variation from those of the north is even more pronounced; the South Carolina average entrance rate being only 23.5 cents.

Although the higher entrance rates in the north as compared with the south may in part be explained by existing color differentials in the southern region, Negro common laborers were not restricted to the

south. Of 40,976 colored workers covered, approximately one-third were in northern plants. Entrance rates of such labor in this section were not less than those of white workers, on the whole. In the south, except in Maryland and West Virginia, the white common laborers averaged more than the Negroes, the rates being 43.4 and 34.5 cents respectively.

The differential between white and Negro common laborers in the south does not account for the entire difference between northern and southern rates. Omitting Negroes in both cases the whites in the north had an average wage of 55.2 cents as compared with 43.4 for white laborers in the south.

FARM WAGES

Seasonal shifts in farm wage rates throughout 1937 were generally wider than those recorded for the preceding 14 years. Using the annual average for 1910–14 as a base of 100 the index of farm wages on Jan. 1, 1938 was 111 as compared with 103 a year earlier and the average for the 12 intervening months was 120. This average was the highest recorded for any year since 1930. Wage rates rose nine points during the first quarter of 1937, an additional 11 points from April 1 to July 1, followed by a 3-point increase in the third quarter, and a decrease of 15 points in the final quarter.

The Bureau of Agricultural Economics reported that the decline in the final quarter was over twice the average seasonal amount of recent years and the largest drop since 1931. This was attributed to the large supply of farm labor at the time of year when demand is reduced by seasonal factors.

At the close of the year wage rates of farm labor with board amounted to $22.18 per month and $1.19 per day for the country as a whole. The rates without board were $33.28 per month and $1.61 per day. Daily rates with board ranged from 60 cents in South Carolina to $2.10 in California and without board from 80 cents to $3 in the same States respectively.

UNION WAGE SCALES

According to the annual surveys by the Bureau of Labor Statistics, made in the spring of each year, hourly wage rates of union labor in the building and printing trades were materially higher in 1937 than in 1936, the index of union hourly wage rates for the building trades advancing 7 per cent above those of 1936. This rate of increase was greater than in any year since 1923. The movement was in continuance of that started after the low point was reached in 1933. As a result the index for 1937 stood at 98 as compared with 100 in 1929.

For union members of all printing trades the index increased by 3.4 per cent between 1936 and 1937; to 107 from a base of 100 in 1929 for the newspaper trades and 106.7 for book and job printing, both being all-time highs since the series were first compiled in 1907.

Average union wage rates in the building trades increased from $1.227 in 1936 to $1.260 in 1937. Considering the rates for journeymen only the average return was 6.6 cents higher in 1937 than in 1936. The increases were shared by all journeyman crafts and were largest for sign painters (13.6 cents), stonemasons (13 cents), plasterers (12.4 cents), structural-iron workers (11.5 cents), and engineers (10.8 cents). For helpers and laborers the average rate declined to 81.8 cents in 1937 or by 1.5 cents from the 1936 average. This decrease was due to reduction in the average wage rates for building laborers and hod carriers in whose unions the membership among the lower-paid workers grew more rapidly than among the higher paid.

Increases in wage rates in the various printing trades were the rule in 1937 and the average hourly rate for all the printing-trades members studied was $1.177, for book and job trades $1.108, and for newspaper workers $1.305.

MINIMUM WAGES

At the end of 1937 minimum wage legislation for women, minors, or special groups of workers, had been

enacted in 22 States, the District of Columbia, and Puerto Rico. The States with such laws were: Arizona, Arkansas, California, Colorado, Connecticut, Illinois, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Washington and Wisconsin. An impetus to such legislation resulted from the favorable decision of the Supreme Court in the early part of 1937.

In several States investigations have been made to determine the minimum wage sufficient to meet necessary costs of employed, self-supporting women at an acceptable standard. Recent minima established to take effect early in 1938 provide for wages in retail trade. In Utah the minimum established was $16 for a 42½-hour week and in the District of Columbia $17 for a week of 40 to 48 hours. These are among the highest rates established up to the present under state machinery.

Oklahoma's minimum wage law was the first adopted which applies to men as well as women. Up to the end of 1937 no rates had been established by the wage boards established under that act. When the rates become effective a large proportion of the wage earning men and women of Oklahoma will be covered by minimum-wage orders.

The Federal Government ventured into a new field for wage setting when prevailing rates were established as minimum scales on vessels receiving operating-differential subsidies. This action was taken in November, 1937 under the powers conferred on the U. S. Maritime Commission by the Merchant Marine Act, 1936. In addition to wage fixing the order established minimum manning scales and reasonable working conditions for the approximately 10,000 seamen serving as officers and crews on the subsidized ships. Practically all deck and engine department men are covered by the scales prescribed but the coverage in the steward's department is only about 56 per cent of the total owing to difficulties of classification. For licensed officers the minimum monthly wages vary from $115 in the engineer department to $265 for the highest-paid first officer in the deck department. Unlicensed personnel in the deck department must be paid at the rate of $50 to $85; engine department employees, $60 to $110; steward's department on passenger vessels, $35 to $55; and steward's department on freight vessels, $55 to $120. Radio operators on one-operator vessels must receive a minimum of $125 and those on two-operator ships, $110 monthly.

WAGES ON PUBLIC CONTRACTS

Determinations of the prevailing minimum wage in nine industries were issued by the Secretary of Labor under the powers delegated by the Walsh-Healy Act, 1936, governing conditions of employment in establishments having public contracts. The industries affected are men's neckwear, men's hats and caps, men's raincoats, cotton garments and allied products, seamless hosiery, men's underwear, work gloves, men's welt shoes and the dimension granite industry.

Under the terms of the public contracts legislation maximum hours are limited to 40 per week and child labor is forbidden. The hourly wages established in the nine determinations made in 1937 vary from a low of 32.5 cents in certain sections of the south for the manufacture of men's underwear and cutting granite to 67.5 cents per hour in the men's hat and cap industry. Geographic differentials in wages were authorized in two of the nine industries—men's underwear and dimension granite. In establishing standards for labor employed on public contracts the usual practice has been to allow tolerance below the minimum wages for special classes of labor such as learners and handicapped and superannuated employees.

HOURS OF LABOR

Following the nullification of the N.R.A. codes in 1935, the hours of labor were increased in many establishments which, under the N.R.A.,

had adopted a 40-hour week schedule. These increases, however, were by no means universal and the averages for all industries continued to be in the neighborhood of 40 hours. Thus, the average weekly hours, in manufacturing industries, which were 40.6 in November, 1936, varied by months within the limits of 39 and 41 up until the latter part of 1937, when the recession in business resulted in average weekly hours declining to 35.4 in November, 1937. In general the heavy or durable goods industries averaged about two hours longer per week than the nondurable or consumption goods industries.

In the non-manufacturing industries, covered by the Bureau of Labor Statistics reports, average hours per week also tended to be either less than or little in excess of 40 hours per week in the productive industries such as coal mining and petroleum producing, but in the distribution and service trades such as retail merchandising and hotels, the hours tended to vary between 45 and 48. It is of interest to note that during 1937 the 35-hour week which had been in effect for some time in bituminous coal mining was extended to the anthracite branch of the industry.

The tendency toward a 40-hour, or even a shorter working week, was given a strong impetus in 1937 by the increasing number of collective agreements negotiated. In the older organized trades the working hours a week also tended to be 40 or less. Detailed data are available for the building and printing trades. These show that union labor in the building trades averaged 39 in May, 1937 as compared with 38.7 in May, 1936. In the printing trades the average was fractionally higher, that is 39.5 hours. The slight increase in hours in the building trades is attributed to abandonment of share-the-work plans rather than to an increase in schedule hours. In the printing trades over 61 per cent of all the union members for whom data were obtained worked on a schedule of 40 hours per week, 20 per cent on a 37.5-hour basis, and only 8 per cent had a work-week in excess of 40 hours. As noted elsewhere in this article, in Pennsylvania a 44-hour maximum work-week was provided by legislation.

COST OF LIVING

The cost of living of wage earners and lower salaried workers advanced during the first three quarters of 1937, then dropped rather sharply and in December was back at approximately the same level as in December of the preceding year. Expressed in figures, as reported quarterly by the Bureau of Labor Statistics, the index number of cost of living in December, 1936 (using 1923–25 as a base of 100) was 82.4, in September, 1937, 85 and in December 1937 was approximately 83. The decline in the latter part of the year was attributable largely to a fall of 3.7 per cent in the retail prices of foods. Rent, fuel and light and house furnishing goods increased during this period. Moreover it may be noted that the decline in all food prices combined was due primarily to a sharp drop of 10 per cent in meat prices between September and December. Dairy products actually increased some 5 per cent and most of the other important food groups showed no very great changes.

INDUSTRIAL RELATIONS

Developments in the field of industrial relations in 1937 were greatly influenced by the activities of the National Labor Relations Board. That Board, it will be remembered, was established by a Congressional Act of 1935, the constitutionality of which was subject to much questioning until the decision of the U. S. Supreme Court in April, 1937. That decision upheld the principles of the act, and, as a result, the number of cases presented to the Board increased very greatly. During the fiscal year ended June 30, 1937, the Board handled 4,398 cases, involving 1,494,835 workers. More than half of these involved the question of the recognition by employers of the workers' representatives. During the period referred to, 265 elections were conducted by agents of the Board. There were 18,424 workers eligible to vote in these elections and 164,207 (or

more than 90 per cent) actually participated in the polling. Of the total of 265 elections, 214 were won by trade unions and 44 were lost by trade unions. In two of the remaining elections there was a tie vote; and in five a trade union was not involved.

A number of collective agreements, affecting large numbers of workers, were negotiated during the year 1937. Some were entered into only after bitter controversy, as in the cases of the Pacific Coast Maritime Agreement and the General Motors Corporation, but agreements with the U. S. Steel Corporation, the largest unit in the steel industry, were negotiated without strikes. Union recognition, in a very important segment of the steel industry, was thus brought about without any disruption to operations, after half a century of organizing efforts had failed.

MARITIME AGREEMENT

On the Pacific Coast the 98-day strike in progress at the beginning of 1937 was settled in February. By the terms of the agreement a $10 per month increase in wages was granted unlicensed seamen and cash instead of time off for overtime work. Wage increases for engineers amounted to $15 to $20 monthly and for telegraphists the increase was $10. Longshoremen received no advance in wages. The settlement was an important one in that 37,000 workers were directly affected by the stoppage of work and thousands of others were involved indirectly when water transportation facilities were disrupted.

This strike resulted from failure of the shipowners and the seven maritime unions to agree on modifications of existing agreements and arbitration awards that were to expire on Sept. 30, 1936.

GENERAL MOTORS SETTLEMENT

The settlement of differences between the General Motors Corporation and its employees followed a 6-weeks strike affecting 18 plants employing 48,000 workers and resulting in a serious impairment of operations in 50 of the company's other plants owing to lack of necessary automobile parts. Although the large majority of employees did not go out on strike before 1937, the stoppage was the outgrowth of incidents that occurred in 1936 when employees struck in protest against the lay-off of certain fellow workers in scattered plants.

Negotiations were attempted with the officials of the Corporation who took the position that all questions of collective bargaining should be discussed with local managers of the individual plants. The union maintained that matters of general labor policy were determined at headquarters. There ensued "sit-down" strikes, and the union framed demands including abolition of all piecework pay, the 30-hour, 6-day week, time and a half for overtime, minimum wage rates, reinstatement for those unjustly discharged, seniority rules, agreement between employers and employees on speed of production, and recognition of the United Automobile Workers of America as the sole bargaining agency.

A statement subsequently posted by General Motors denied recognition to any union as the sole bargaining agency of labor and outlined its labor policies.

Both the Governor of Michigan and the United States Department of Labor attempted to bring about a settlement on several occasions before they met with success. Negotiations were hindered by refusal of the union to vacate plant premises and the unwillingness of the Corporation to enter into parleys until the workers left the shops. Two injunctions were obtained from the circuit court at Flint ordering the strikers out. While the Governor acceded to the employer's demands that the National Guard stand by, he would not authorize evacuation of "sit-down" strikers by force.

A meeting was, however, finally arranged and on Feb. 3 the representatives of both parties to the dispute came to an agreement. Its principal terms were recognition of the union as the collective bargaining

agency for its own members, termination of the strike, no discrimination against strikers in re-employment, agreement on the part of employees to try peaceful means of settlement before having recourse to strikes, and withdrawal of the injunction against the strikers after evacuation of Corporation property.

GLASS INDUSTRY SETTLEMENT

One of the early settlements of the year, that affecting about 13,000 employees of the two largest flat-glass manufacturing companies, included in its terms some important changes in seniority rights. The strikes leading up to the agreements were called when one-year agreements of the companies with the Federation of Flat Glass Workers of America, an affiliate of the Committee for Industrial Organization, expired.

Employees of the Pittsburgh Plate Glass Co. proposed a 10-cent hourly wage increase, wage adjustments to bring about uniform conditions with those of the Libby-Owens-Ford Glass Co., the preferential union shop, and the check-off. The demands not being met a strike was called. This was followed by a stoppage of the Libby-Owens-Ford employees who claimed orders from the shutdown plants were being transferred to their own shops. The company held the strike was a violation of the existing contract and the union countered with a new agreement containing demands similar to those of the Pittsburgh employees.

Federal conciliators assisted in bringing about a settlement. The agreement entered into recognizes the Federation of Flat Glass Workers of America as the collective bargaining agency of all employees in the two companies. It provides an 8-cent an hour wage increase and establishes special machinery to bring about uniform wage conditions in the two large companies. Family status is removed as a consideration in determining lay-offs in establishing seniority rights. Temporary workers do not accumulate seniority but once they are made permanent seniority credit accumulates from the first day. An employee temporarily transferred is entitled to resume his standing on his old job without loss in seniority when he returns to it. Former employees are accorded preference for re-employment in their own company. The Libby-Owens-Ford agreement also provides that when a man of three years' experience is displaced because of a permanent shutdown in the plant where he has been employed, he may be transferred to another department if this can be accomplished without detriment to any other person of equal seniority. Other points dealt with are changes in work schedules, equal division of available work, and approval by the employer of union notices posted in the plants of the Pittsburgh Plate Glass Co.

U. S. STEEL CORPORATION AGREEMENT

The success of the Steel Workers' Organizing Committee, acting for the Amalgamated Association of Iron, Steel, and Tin Workers, in securing collective agreements with the various subsidiaries of the U. S. Steel Corporation was an important step in the effort of labor to organize the steel industry. The first agreement, namely with the Carnegie-Illinois Steel Corporation, was signed March 2, 1937 providing union recognition and recognizing the Amalgamated as bargaining agency for its members. It also contained provisions on working conditions, including the 8-hour day and the 40-hour week for the first time, overtime pay at one and one-half the regular rates, and a 10-cent hourly wage increase for classifications previously paying $4.20 a day or less.

On March 17 a second and final agreement was reached incorporating the union recognition, wage, and hours provisions of the preliminary agreement. The terms of the agreement extended the 10-cent wage increase to all hourly rates and its equivalent applied to tonnage and piece rates, prohibited work on Labor Day and Christmas except in continuous-process operations, granted vacations of one week a year to each

union member with five years of continuous service at the average weekly rate of pay for the two pay periods preceding the vacation (not for less than 40 or more than 48 hours). It was further agreed that seniority should govern promotion, lay-off, and re-employment when the qualifications are equal. While the management was recognized as vested with exclusive right to direct the working force, a procedure was outlined for adjusting grievances.

STRIKES

Although final figures have not yet been compiled it seems likely that they will show that 1937 was a record year in this respect, as regards numbers of strikes, persons involved, and man-days lost. In 1936 the trend was definitely upward but although the number of strikes had been increasing they were still relatively short and involved small numbers. The year 1937 opened with 170 new disputes in January, in March, 605, and in April, May and June, respectively, over 500. During June nearly 5,000,000 man-days were lost owing to strikes. In the closing months of the year this activity was tapering off with new strikes decreasing in number and settlements of existing differences helping to bring about a reduction in the month-to-month record of man-days of idleness.

SOCIAL SECURITY

Operations under the Social Security Act were well advanced at the close of the year for all five tvpes of security plans—Federal old-age retirement plan, unemployment insurance, aid to the needy aged, aid to the needy blind, and aid to dependent children. The old-age retirement plan, being a Federal matter, no special laws were required in the States in order that their residents might participate. For the other four plans 35 States, the District of Columbia, and Hawaii had enacted the necessary legislation for full participation by the end of 1937. Aid to the needy aged was provided for in 47 States, Alaska, the District of Columbia, and Hawaii, Virginia being the only State without such coverage. Blind pension systems were in operation in 38 States, the District of Columbia, and Hawaii, and for aid to dependent children the totals were the same, that is 38 States, the District of Columbia, and Hawaii. Complete coverage was recorded for unemployment insurance with all 48 States, Alaska, the District of Columbia, and Hawaii participating.

OLD-AGE RETIREMENT

As the major provisions for old-age retirement pensions do not become effective until Jan. 1, 1942 no operating statistics are available. The only payments authorized prior to that date are lump sums to contributors reaching age 65, or to their estates in case of death, if the individuals covered are not entitled to benefits. However, social security numbers were assigned to over 36,500,000 applicants up to the end of 1937; of these almost 30,000,000 had obtained their identification numbers in the first half of the year.

PUBLIC ASSISTANCE

Federal grants were authorized in 47 States and three Territories for one or more of the three public assistance programs. These grants totaled on Dec. 31, 1937, $257,400,000 for old age assistance, $8,900,000 for the blind and $31,100,000 for dependent children. It was estimated that 2,186,000 needy individuals would be entitled to assistance in January, 1938 under the 130 approved plans. The average old-age pension in November, 1937 was $19.22, that for the blind was $25.58, and per family with dependent children, $31.98. It was estimated that payments in January, 1938 from Federal, state, and local funds for aid to dependent children would take care of 532,700 such dependents in 213,800 families.

UNEMPLOYMENT COMPENSATION

With a coverage of 21,000,000 workers the administrators of the unemployment compensation plans of the States and Territories were allotted $29,000,000 up to the end of

December; and on Dec. 15 the unemployment trust fund in the United States Treasury amounted to $640,250,000 representing deposits plus accrued interest of 46 States and the District of Columbia. Withdrawals totaled $2,250,000, all of which went to Wisconsin, the only State paying unemployment benefits in 1937. With the plans of 21 States and the District of Columbia becoming effective Jan. 1, 1938 the withdrawals from the trust fund will rise sharply.

EXTENSION OF SOCIAL SECURITY ACT COVERAGE

In the closing months of the year a number of suggestions were brought forward for enlarging the coverage of the Social Security Act. Among the provisions believed to be desirable was one whereby States participating under the unemployment insurance provisions would begin benefit payments one year after the start of tax collections instead of in the two years required by the law. In New York State, where the length of the service period necessary for receipt of benefits has already been reduced from 13 weeks to 15 days, the distinction between manual and nonmanual workers eliminated, and the coverage extended from a limit of those earning $2,600 to $3,000, additional changes have been proposed. The most important of these proposals are that the insurance system be extended to cover all workers in insurable employment regardless of income up to and including $3,000 so that a larger proportion of the tax be returned to the State; reduction of the waiting period necessary before insured persons are entitled to benefit; and simplification of administrative problems by adopting the calendar year as the basis for computing benefits.

RAILROAD RETIREMENT ACT

When the new legislation was enacted to continue the public pension plan for railroad employees, in late June, 1937, large numbers of railroad pensioners were transferred from private to public pension rolls. In December, 1936, a total of 1,742 persons received pensions of $108,261 under the public retirement plan; in June the figures were 61,243 and $3,601,812, respectively; and in December, 1937, there were 86,635 pensioners and the aggregate amount paid out amounted to $5,214,727.

LABOR MOVEMENT

The differences in theory of labor organization of the American Federation of Labor and the Committee for Industrial Organization remained unsettled despite negotiations to end the existing breach. Both major federations increased their membership in the course of the year and according to the best estimates available each had approximately 4,000,000 persons enrolled. The major efforts of the Committee for Industrial Organization were directed toward extending membership in the mass production industries such as steel and textiles. Membership in the American Federation of Labor was notably extended among electrical workers, employees of hotels and restaurants, machinists, and teamsters.

Professional and white-collar workers joined labor organizations in increasing numbers. This trend was particularly noticeable among Government employees and newspaper workers. The Committee for Industrial Organization carried on an active campaign in the various Federal Government departments and in state and municipal offices. The organizations in these fields that are affiliated with the American Federation of Labor also expanded. Stenographers, typists, and clerks, who had long sought to secure international status with the American Federation of Labor, were finally brought together in the National Council of Office Workers as a preliminary step in organizing as an international union.

Organized newspaper workers increased their numbers to a marked extent and during the year left the American Federation of Labor to affiliate with the Committee for Industrial Organization. Transfer of membership was endorsed by the American Newspaper Guild in a na-

tional referendum, which also broadened the basis of membership in the Guild to include the employees of commercial departments of newspapers.

LABOR MEETINGS

Following its usual custom the American Federation of Labor held its annual convention in the fall of the year. The business transacted included authorization of continued study of social insurance, support of the low-rent housing program, commendation of Federal work on apprenticeship, support of study on the position of the older worker in industry, study of proposals for health insurance, and an endorsement of a movement for paid vacations. The constitution of the organization was amended to strengthen and centralize the executive council's authority and that of the president. All members of the executive council were reelected for the ensuing term.

While the Committee for Industrial Organization had not established the practice of calling an annual convention in 1937, a special meeting was held at about the same time of year as that of the American Federation of Labor. At this session a committee was named to attend meetings with the American Federation of Labor looking toward a settlement of existing differences between the two bodies. Representatives of the national and international unions at the session of the Committee for Industrial Organization also voted authority to their executives to call a national convention for the purpose of adopting a constitution.

HOUSING

There has been a growing realization that revival of the building trades is necessary both to restore workers to jobs and to provide them with adequate low-cost housing. As private initiative had not been successful in doing this, the Federal Government undertook to subsidize demonstration projects to house those unable to pay economic rents, to assist the States in building of this kind and to encourage private building for those of low-income who can meet the cost of their own housing provided the price is kept at a moderate level by economies in building and lowered financing charges.

FEDERAL BUILDING

In 1937 many of the slum clearance and rural projects provided with Federal emergency funds were completed and occupied. Housing of four major types was provided, each of which is briefly described below. Penderlea, N.C. is a rural community of small farms; Longview, Wash., a subsistence homestead project where employees derive their principal income from other employment; Greenbelt, Md., is a suburban community where city employees may live at low cost; and Hopkins Place, Washington, D.C., is an example of slum clearance.

At Penderlea, N.C., the homestead averages 20 acres in a fertile area suitable for growing small fruit and truck crops. Each farm is provided with a residence, a chicken house with fenced-in chicken run, a barn, a movable hog house, and a pump. The houses are of wood and have four, five or six rooms. All houses have simple but complete electric and plumbing equipment. Resident families were chosen on the basis of need and capacity. In the early months of operation their livelihood was derived from clearing the land preparatory to taking up regular agricultural work.

Longview, Wash., homestead is a community of 60 families where most of the wage earners are lumber-mill workers and carry on small-scale subsistence gardening in their spare time. The community is three miles west of the business district of the nearby town. The houses are of four to six rooms, of frame construction and equipped with electricity and water. They have combination cow barns and poultry houses and garages. The residents were chosen from fully-employed but low-paid workers. The project was conveyed to a local corporation at practically its original cost which was $2,915 for each home-

stead. To carry his property the purchaser pays $17.65 per month of which $10.43 goes toward repaying the Government and the balance for insurance, maintenance, and taxes. On this project residents have had notable success in marketing crops in excess of family needs at a profit.

Greenbelt, Md. is the first of three similar towns to be completed. It was started to demonstrate the feasibility of establishing a rural-industrial community on the outskirts of a crowded city and to show the ultimate advantages of comprehensive city planning. On this project residents may have gardens but this is not required. The town has been conveyed to a co-operative association and takes its place as a tax-paying entity in the county where it is located. Originally housing was provided for 1,000 families but this is being extended. The houses are of modern design in rows and groups built either of brick veneer or cinder block. In addition, 288 apartment units are included. All are equipped with modern conveniences and heated from a central plant. The town has stores, educational, and social facilities. In completing the construction of the town many delays were encountered. However, families moved in during 1937. Dwelling units are rented to occupants and not sold. Residents are restricted to those with incomes ranging from $800 for 1-person families to $2,200 for 6-person families. Monthly rentals are from $18 for one and one-half rooms to $41 for seven rooms.

In Washington, D.C. the Alley Dwelling Authority, which was created by Congress to clear the inhabited alleys of the city, has put the vacated land to various productive uses. Its first efforts in building individual dwellings for colored families attracted attention owing to the superior character of the housing constructed and the low cost. The site, known as Hopkins Place, has been developed so that the 23 houses face three sides of a hollow square with the open side to the street. Of these houses 12 are new and the other 11 reconditioned. They are built of brick and painted white. Each has four rooms of good size, two to a floor, and all but five have complete bathrooms. The average cost of the new houses was $3,322 and with land, equipment and overhead the cost ranged from $3,707 to $4,060, end houses being of slightly higher cost. By renting them at $6.25 to $7.19 per room per month the income will be sufficient to return 3 per cent on the investment.

LOCAL GOVERNMENT HOUSING

With the enactment of the United States Housing Act of 1937, the Federal Government adopted a changed policy, whereby aid is afforded the States in their public housing projects instead of the earlier system under which the Federal Government either built on its own account or under a co-operative arrangement where the State had the necessary permissive legislation. It has, therefore, become increasingly important that the several States should have the necessary laws making them eligible to receive grants in aid of housing.

At the end of 1937 there were 30 States with housing authority laws, of which five States had laws that failed to meet the requirements for receiving financial aid from the Federal Government in building low-cost housing. Of the five disqualified States, four failed to provide tax-exemption on public housing projects or lacked other means of meeting requirements of the Housing Act providing for annual contributions by local communities and the other had no provision at the end of 1937 whereby local or city housing authorities might be established.

About 50 local housing authorities had been created late in 1937 but in some instances existed in name only and were not yet prepared to become active builders as they had not made studies of the existing slum clearance problem in their respective communities.

The housing authority of the City of New York is one of the few such local bodies that has actually provided houses. This authority has the

distinction of having floated its own bonds in providing the project known as First Houses. Rents at First Houses are fixed at $5 to $7 per room per month and the project consists of 122 apartments.

PRIVATE CONSTRUCTION ACTIVITIES

Private industry has done considerable experimental work with prefabrication as a means of lowering building costs, and special groups, such as the lumber industry, have built limited numbers of small houses to show what could be accomplished with good planning to bring house costs down. The Federal Government has interested itself in these efforts to the extent of providing house plans, investigating costs in various parts of the country and publishing the results, and also by making cheaper credit available.

Loans guaranteed under the Federal Housing Administration's powers were available throughout 1937 at rates lower than those commonly obtainable and in amounts up to 80 per cent of the value of the houses covered. In the latter part of the year proposals were brought forward for liberalizing the terms of F.H.A. loans still further and although no legislation was enacted both Houses of Congress considered bills. It was expected that differences in the two bills would be ironed out in the early part of 1938 and a law would then be enacted. It was also anticipated that the amended law would provide for loans up to 90 per cent of the appraised value of any property for the lowest-cost housing and further reduce effective interest rates.

FEDERAL LEGISLATION

Promotion of Labor Standards for Apprentices.—Effective as of Aug. 16, 1937, Congress enacted legislation enabling the Department of Labor to formulate and promote the furtherance of labor standards necessary to safeguard the welfare of apprentices. Hitherto such work has been carried on by the National Youth Administration. The new act seeks the co-operation of employers and labor in the formulation of apprenticeship programs, and also is designed to assist those States engaged in the work of promoting standards of apprenticeship.

Railroad Retirement.—This legislation is the result of an agreement between representatives of the carriers and the employees following the edict of the United States District Court for the District of Columbia, declaring partially unconstitutional the act of 1935. Under the 1937 act employees are eligible to retire voluntarily at 65 years of age. However, they may retire at 60 years of age, after completion of 30 years' service, with a reduction in the annuity at the rate of one one-hundred and eightieth for each month the employee is under 65 years of age. Death benefits are provided for a deceased employee's estate. Taxes ranging from 2¾ to 3¾ per cent on carriers and employees are levied to pay for the retirement benefits. These taxes are to be collected by the Bureau of Internal Revenue and paid into the Treasury. All annuities are paid out of the funds impounded in the United States Treasury.

Relief.—The sum of $1,500,000,000 was appropriated for the continuance of work-relief projects, the money to be allocated to the following classes of projects: (a) highways, roads, and streets, $415,000,000; (b) public buildings, parks and other recreational facilities, including buildings therein, public utilities, electric transmission and distribution lines or systems to serve persons in rural areas (including projects sponsored by and for the benefit of nonprofit and co-operative associations), sewer systems, water supply and purification, airports and other transportation facilities, flood control, conservation, eradication of insect pests and miscellaneous work projects, $630,000,000; (c) assistance for educational, professional, and self-help, and clerical persons and women's projects, $380,000,000; and (d) National Youth Administration $75,000,000. Of special interest to labor is the requirement that the payment of the prevailing rate of wages as provided for

in the Davis-Bacon Act must be adhered to in the prosecution of the various projects.

Interstate Compacts. —Congress consented to and made effective the interstate compact on minimum wages previously ratified by the Legislatures of Massachusetts, New Hampshire, and Rhode Island.

Farm Tenancy.—The Secretary of Agriculture was authorized to make loans to tenant farmers, farm laborers, sharecroppers, etc., for the purchase of farms over a period of time at low interest rates. The loans are made for not more than 40 years, bearing interest at a rate of 3 per cent per year.

The Secretary of Agriculture, in another act commonly referred to as the Sugar Act, was empowered to require that sugar growers, as a condition precedent to qualifying for benefit payments, must pay at least a minimum wage as determined by the Secretary. Employment of children under 14 years of age is forbidden, and children between the ages of 14 and 16 must not be employed more than 8 hours a day. The last two provisions, however, do not apply to members of the immediate family of persons who own as much as 40 per cent of the crop.

Bituminous Coal Act.—The National Bituminous Coal Commission, consisting of seven members, was established in the Department of the Interior. The act provides for the regulation of interstate commerce in the soft-coal industry. While this act is similar in many respects to the 1935 act the labor provisions are not included.

United States Housing Act.—By terms of this act, a national housing authority is created in the Department of the Interior. The act authorizes loans to public housing agencies, to assist in the development, acquisition, or administration of low-rent housing or slum-clearance projects by such agencies. Over a period of three years, $500,000,000 is authorized to be spent in the construction of dwellings. The act limits the cost in cities of over 500,000 population to $5,000 a unit. or $1,250 for each room. In smaller cities or political subdivisions the cost is limited to $4,000 per unit or $1,000 a room.

STATE LABOR LEGISLATION

Child Labor.—Four States—Kansas, Kentucky, Nevada and New Mexico—ratified the Federal child labor amendment, bringing the number of ratifying States to a total of 28. However, the Kentucky Supreme Court in a case decided Oct. 1, 1937, held that the ratification by the State of Kentucky was invalid.

In Hawaii the compulsory school-attendance law was amended by increasing the age of attendance from 14 to 16 years. Missouri and New York passed laws prohibiting the sale of goods, wares, or merchandise manufactured by child labor within or without the State. North Carolina made considerable changes in the law regulating child labor; in that State minors between 16 and 18 may hereafter be employed only 9 hours a day and 48 hours a week, no child under 16 may be employed in any factory and minors under 18 may not work in certain hazardous occupations. The child-labor law of South Carolina was also changed so as to prohibit the employment of minors under 16 in any factory, mine, or textile establishment. In Vermont the law was changed by providing for an 8-hour day and 6-day week, while in Wyoming females may not be employed before 7 A.M. or after 10 P.M. In Wisconsin the child-labor law was amended by providing that boys may not engage in street trades until they are 13 years of age. In that State badges are now required to be worn by minors up to the age of 18, instead of 17 as heretofore, and the hours of labor of employment in street trades are limited to 8 hours a day and 40 hours a week. In Connecticut the department of health was authorized to declare the occupations that are hazardous to the health of minors under 18.

Hours of Labor for Men and Women.—Six States legislated on the subject of hours of work for both men and women. In Colorado the

hours of labor of pharmacists were limited so as not to exceed an average of 9 hours a day and not more than 108 hours in any two consecutive weeks. In that State the legislature also required that all persons employed by a contractor doing public printing must observe the prevailing standard of working hours and conditions fixed by the industrial commission. In North Carolina laws were enacted regulating the hours of labor of men, women, and minors. Women may not be employed for more than 48 hours a week, 9 hours a day, and 6 days a week, and men may not work for more than 55 hours a week, 10 hours a day, or 12 days in any consecutive 14. However, there are numerous exceptions, such as cases of emergency and seasonal employments.

The Pennsylvania Legislature by a comprehensive act regulated the hours of labor of all employees in the State. Employment is limited to 44 hours a week, 8 hours a day, and 5½ days a week. The law, however, does not apply to agricultural labor, domestic servants in private homes, or persons over 21 years of age and earning $25 a week or more in executive positions or in the professions, and the department of labor and industry may grant further exemptions. In Washington the hours of labor of domestic employees are limited to 60 hours a week. In Utah (H. J. Res. 1) a constitutional amendment was proposed to permit the legislature to determine the hours of labor in certain cases; this amendment will be voted on at the next general election.

Hours of Labor for Women and Minors.—A number of States made changes in laws regulating the hours of labor of women and minors. The Arkansas law was amended by adding to the list of establishments to which the law already applies, hotels, restaurants, banks, insurance companies, public utilities, and the operation of elevators. Under this law the hours of work are limited to 9 a day and 54 a week. The Connecticut Legislature reduced the hours of labor for females in mercantile establishments to 8 a day, 48 a week, and 6 days a week, instead of the former limitations of 9 a day and 52 a week.

The Illinois law was so amended as to limit the hours of labor to 8 a day and 48 a week. In Nevada the hours of labor of women were limited to 8 a day and 48 a week. New Hampshire reduced the maximum hours of labor for women and minors while engaged at manual or mechanical labor in mercantile establishments from 10¼ to 10 a day, and from 54 to 48 a week.

By the provisions of a new law in New Jersey women employed in manufacturing establishments, bakeries, and restaurants are not permitted to work between midnight and 7 o'clock in the morning, but glass manufacturing establishments and hotel restaurants are not covered by the law. In New York the maximum hours of employment of female elevator operators were fixed at 8 a day and 48 a week, instead of 9 and 54, respectively, and under another law a female over 21 may not be employed as a conductor or guard on street, surface, electric, subway, or elevated trains more than 8 hours a day or 48 hours a week. The former was 9 and 54 hours, respectively.

An Ohio law limited the maximum hours for females to 8 a day (instead of 9) and 48 a week (instead of 50), while in manufacturing industries females may not be employed for more than 8 hours a day or 45 hours a week. In Vermont the hours for women and children are now limited to 9 a day (formerly 10½) and 50 per week (formerly 56).

The Utah law governing an 8-hour day for men employed in mines was amended so as to provide that the 8-hour period must be computed from the time the men go underground until they return to the surface.

Collective Bargaining.—In five States—Massachusetts, New York, Pennsylvania, Utah, and Wisconsin—laws were enacted establishing State labor relations boards. Colorado passed a law regulating the bituminous-coal mining industry of the State and providing for the establishment

of codes of fair competition. The law requires that employees must be permitted to organize and bargain collectively through representatives of their own choice, and assures to them freedom from interference, restraint, and coercion from any source whatever. Anti-union contracts are prohibited. The Nevada Legislature provided that combinations of workmen or laborers may represent employees in a labor dispute. In Utah a law was passed requiring employers, at the request of an employee, to pay not more than 3 per cent of the employee's wages to labor organizations. The registration of labor organizations with the industrial commission is provided by another law.

Arbitration and Mediation.—In New York a state board of mediation was established. Legislative power was granted to the Pennsylvania Department of Labor and Industry to mediate labor disputes. In South Carolina the duties formerly vested in the state board of conciliation were transferred to the commissioner of labor. The commissioner is required to investigate industrial disputes, strikes, or lock-outs, to make findings of fact, and attempt to induce both parties to arrive at an amicable agreement.

Minimum Wages.—As a result of the United States Supreme Court decision holding minimum-wage laws constitutional, much legislation was adopted by the States. In four jurisdictions (Arkansas, District of Columbia, Minnesota, and Puerto Rico) minimum-wage laws which were already on the statute books were revived and made effective. Such laws were also amended or re-enacted in Colorado, Connecticut, Massachusetts, Minnesota, New York, and Wisconsin. New minimum-wage laws were adopted in Arizona, Nevada, Oklahoma, and Pennsylvania. As already noted the Oklahoma law was made applicable to men, as well as to women and minors.

Payment of Wages.—A number of States made changes in the laws governing the payment of wages. In Maine a daily record of the hours of labor of employees must be kept. Wages must be paid not later than 8 A.M. on the 15th and last days of the month in Nevada. A new law was enacted in New Mexico requiring semi-monthly pay days and regulating the time of payment in case of resignation or discharge. The Utah law was re-enacted and provides for regular semi-monthly pay days and regulation of the time of payment in cases of resignation, discharge, or suspension of work. In Maryland the legislature authorized the appointment of a commission to study the question of unpaid wages.

A new law was enacted in Illinois requiring the payment of wages of a discharged employee within five days, when amounting to $100 or less. In Texas employers who pay wages in scrip are required to redeem it in cash when presented on the regular pay day. In case of a refusal to redeem, the holder of the scrip may sue and the judgment will include a penalty of 25 per cent of the amount due plus reasonable attorneys' fees. The Florida law was amended so as to provide that the face value of scrip must be paid in cash within 30 days instead of 90 days as formerly. A Maryland law now prohibits a bank or trust company from paying less than the full face value of any check issued in payment of wages.

Labor Departments.—Under a State government-reorganization plan, departments of labor were established in Arkansas, Georgia, and Tennessee. In Indiana a division of labor was established in the department of commerce and industry. The Industrial Commission of Florida was authorized to administer Federal acts passed for the benefit of employers and employees. The act also requires employers to furnish safe employment, and general rule-making power as to safety and health has been given to the commission, including authority to prescribe safety devices and other means of protection against accidents and occupational diseases.

Employment Agencies.—All of the States now have accepted the provisions of the Wagner-Peyser Act,

which established a Federal system of public employment offices. Many of the States that accepted the provisions of this act prior to the enactment of unemployment-compensation laws have now incorporated such provisions in the unemployment-compensation statutes. The following accepted the act for the first time in 1937: Alaska, Hawaii, Kansas, and Montana.

Social Security.—At the present time all States have laws providing for unemployment compensation, and every State except Virginia provides old-age assistance. Practically all of the States also have laws providing aid to dependent children and the blind. Thirteen States and Hawaii passed new or amendatory legislation covering all phases of social-security legislation, including assistance to the aged, dependent children, and the blind. Such legislation was enacted in Arkansas, Florida, Hawaii, Idaho, Indiana, Kansas, Missouri, Montana, New Mexico, North Carolina, Pennsylvania, Texas, Utah and Wyoming.

Old-Age Assistance.—New laws providing for old-age assistance were enacted in Georgia, South Carolina, and Tennessee (ch. 49) while amendatory legislation was enacted in 27 other States. In Nevada a constitutional amendment directing counties to assist the aged and infirm was approved by the people on March 17, 1937. In Missouri a resolution was adopted proposing an amendment to the state constitution which will be voted on in November 1938. Pennsylvania also adopted an amendment to its constitution, authorizing old-age assistance. In Virginia, a commission was appointed to study the subject of old-age assistance.

Discriminations. — Massachusetts amended its law defining discrimination as "dismissal from employment of, or refusal to employ, any person between the ages of 45 and 65 because of his age"; that State also prohibited the making of contracts with age limits. A resolution was adopted in New York creating a joint legislative committee to investigate economic conditions or statutory provisions which tend to produce discrimination against employees who are 40 years of age or over. Kansas enacted a law which prohibits discrimination and intimidation on account of race or color in employment on public works.

Occupational Diseases.—Considerable progress was made in the field of occupational-disease legislation during 1937. At the beginning of the year, there were 16 States having such legislation, and as a result of action taken that year, workmen suffering from occupational diseases are now protected in 21 States. In addition the laws of the District of Columbia, Hawaii, the Philippines, Puerto Rico, the United States Employees' Compensation Act, and the Federal Longshoremen's and Harbor Workers' Act cover such diseases.

New occupational-disease laws were adopted in Delaware, Indiana, Michigan, Pennsylvania, and Washington. The Delaware law provides compensation for 12 different occupational diseases, including dust diseases, while the Michigan act authorizes compensation for 31 diseases. The Pennsylvania and Washington laws also provide compensation for enumerated diseases. The Indiana act, on the other hand, covers any occupational disease arising out of the employment.

In Nebraska coverage of the law was extended to include occupational diseases contracted in the battery-manufacturing industry, and Ohio amended the law by adding silicosis to the list of compensable occupational diseases. By the Wisconsin amendment (ch. 180) an employee discharged because of a nondisabling silicosis may now be compensated in an amount not to exceed $3,500. Arkansas is one of the States with no workmen's compensation law; the legislature however authorized a survey of occupational diseases in industry. Idaho empowered the department of public works to study the subject. In Maine a recess committee was appointed to investigate the desirability of enacting such legislation. In Massachusetts the legislature directed the department of pub-

lic health and the department of labor and industries to make a similar investigation. In Montana a commission is to make a study of occupational diseases, particularly silicosis. The New Hampshire legislature authorized a commission composed of three physicians, three representatives of labor, and three representatives of industry to study the subject. In Oregon a committee of five members appointed by the Governor will make a study of occupational diseases and report its findings and recommendations to the next legislature.

EMPLOYMENT CONDITIONS

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EMPLOYMENT IN MANUFACTURING

Employment in the first nine months of 1937 averaged about 12 per cent higher than in the same period of 1936 and payrolls were 27 per cent larger. But the improvement and payrolls which had begun in 1933 continued only to May, 1937. Since May, neither index has risen greatly and in September both showed a decline. The United States Bureau of Labor Statistics index of factory employment (1923–25 average-100) stood 12.5 joints higher in May than in the same month of 1936, but in September was only 6.6 points higher than in September, 1936. The estimate for October 1937 (revised and adjusted to the Census of Manufactures totals for 1933) indicates that the decline was not arrested in the tenth month of the year. The percentage increase in October was 3.9 over October, 1936, while in the preceding year the percentage increase for this month over October, 1935, had been 8.1. In December, 1937 the Secretary of Labor reported that the November index of factory employment was 2.3 per cent below the level for November, 1936. The tabular summary below indicates the more-than-seasonal decline from July to October in manufacturing employment, and a comparison of trends in the durable and non-durable goods industries.

Manufacturing payrolls declined sharply in September, being 3.7 points below the figure for August and five points lower than in May, the peak month of employment activity for 1937.

INDEXES OF EMPLOYMENT, 1936-37
(1923–25 Average = 100)

	All manufacturing	Durable goods group	Non-durable goods group
1935 Average	82.2	71.4	93.8
1936 Average	91.9	84.7	99.5
1937			
January...	96.5	90.4	103.0
February..	99.0	93.2	105.2
March.....	101.1	96.4	106.1
April.....	102.1	98.6	105.9
May.....	102.3	99.9	104.8
June.....	101.1	98.8	103.5
July.....	101.4	98.9	104.1
August....	102.3	98.1	106.9
September.	102.1	97.3	107.3
October*...	100.5	—	—

* Preliminary

The Federal Reserve Board index of industrial production for the first nine months of 1937 (adjusted for seasonal changes) showed an increase of 14 per cent over the same period in 1936, standing at about 116 per cent of its 1923–25 average. The increase was considerably less in September, however, than in the first months of 1937, and in October the index was approximately five per cent below the same month of 1936. In November the index fell to 90, the lowest point touched since June, 1936.

Estimates of total employment for manufacturing industries, Class I railroads and 13 other non-manufac-

turing industries, have been made by Witt Bowden of the Bureau of Labor Statistics. These show employment of 18,801,000 workers in 1929 and 12,788,000 in 1932. In July, 1932, the number was 12,076,000, and in July, 1937, 16,813,000. These figures are affected by a variety of factors (such as changes in volume, hours, and productivity), which operated very unevenly in different industries. The level of employment in 1937 was still notably below that of 1929.

The gains in manufacturing employment in the early months of 1937 were marked in the durable goods industries, as indicated by the summary table above. Among the influences accounting for this rise was the recovery in steel production which was 20 per cent greater in the first ten months of 1937 than in 1936 and within four per cent of the 1929 figure for the same period. Transportation equipment, especially automobiles, electrical equipment, and stone, clay, and glass products also contributed to the increased employment. Toward the end of the year declines in employment in steel (which experienced one of the most severe drops in the history of the industry), automobiles (which failed to show the usual increase in automobile assemblies), and textiles were notable.

U. S. BUREAU OF LABOR STATISTICS INDEXES FOR SELECTED INDUSTRIAL GROUPS

Industry Group	Index of Employment September 1937 (1923–25 = 100)	Per cent change September 1936 to September 1937	Per cent change September 1935 to September 1936
Durable goods	97.3	+13.5	+13.6
Non-durable goods	107.3	+ 1.3	+ 4.1
Selected durable goods industries:			
Iron and steel	108.8	+11.9	+17.4
Machinery	130.7	+21.6	+14.2
Electrical equipment	121.3	+25.7	+16.0
Automobiles	112.5	+24.6	+ 6.1
Stone, clay, and glass products	72.7	+ 6.6	+11.5
Agricultural implements	147.2	+56.8	−14.5
Lumber and allied products	71.7	+ 5.1	+ 6.8
Selected non-durable goods industries			
Textiles	101.6	− 1.7	+ 4.1
Food products	137.8	+ 1.4	+ 3.1
Leather products	92.7	− 1.5	+ 0.7
Tobacco manufactures	62.1	− 2.4	+ 1.9
Chemicals and petroleum refining	128.6	+ 7.6	+ 6.1
Paper and printing	107.7	+ 5.0	+ 4.8
Rubber products	98.0	+ 3.9	+11.2

The main offsetting factor in the downward trend of employment in October was the seasonal increase in employment in wholesale and retail trade and coal mining. But in November, 1937, each of the 16 non-manufacturing industries surveyed by the Bureau of Labor Statistics, with the exception of brokerage firms, reported employment declines. The most pronounced losses were in industries suffering seasonal declines, but in many instances slackening business activity accentuated the losses. The decline in retail trade employment from October to November, 1937 was the first such recession since 1932.

EMPLOYMENT IN MINING

Indexes of employment in mining are presented in the table below (1929 = 100). The index for 1937 covers the first ten months. Employment in anthracite mining was slightly below the index for 1936. Employment in bituminous mining showed a slight increase, but recent reports indicate that it declined

	Employment index 1933	Employment index 1936	Employment index 1937 (10 months)	Per cent change Oct. 1936 to Oct. 1937
Anthracite	51.7	51.8	49.7	2.2
Bituminous	67.9	77.8	80.2	2.3
Metalliferous	34.6	59.1	77.5	29.2

contra-seasonally in November, 1937. The 1937 gain in metalliferous mining was marked and employment is now within about 22 points of the 1929 figure.

BUILDING CONSTRUCTION

The increase in construction activity in 1937 did not fulfill expectations. The value of construction contracts awarded in the 37 eastern States for the first 11½ months of 1937 was reported to be only 10 per cent greater than in the same period in 1936. Reflecting the retrenchment in government expenditures, public contracts were 15 per cent less than in 1936. Private construction was 34 per cent higher. There was a decline of seven per cent in construction for utilities and public works, and residential construction increased by only 15 per cent. Promising increases in the Federal Reserve Board index (seasonally adjusted) of value of contracts awarded in the first two months of 1937 were checked later in the year. In August the total value of contracts awarded reached the highest point since January, 1936, but the failure of private, especially residential, construction to expand influenced the index for the rest of the year. Rising costs of construction, higher interest rates and taxes affected the rate of private building adversely. In September the index for total construction showed a 12 per cent decline below the same month in 1936. There was little change from November to December; privately financed construction declined, but public awards increased over the preceding months. Accurate and complete figures on construction employment are not available. It is known that employment lags behind the award of contracts, so that the employment fluctuations reflecting the figures given above probably have not yet expended themselves fully. Changes in the Bureau of Labor Statistics index (12-month average 1929–100), shown in the table below, indicate that employment gains over the corresponding months of 1936 failed to be sustained toward the end of 1937.

PER CENT CHANGE IN EMPLOYMENT IN BUILDING CONSTRUCTION, 1937

	From preceding month	From corresponding month of 1936
January	−11.5	+32.8
February	− 0.8	+55.1
March	+ 2.3	+24.0
April	+ 9.8	+17.3
May	+ 7.7	+11.8
June	+ 3.1	+10.6
July	+ 3.3	+13.0
August	+ 2.4	+ 9.1
September	− 0.1	+ 2.0

RAILROADS

Employment on railroads in recent years has been affected by the increasing competition of other means of transportation, technological improvements which reduced the number of employees required, and, during the depression, the cyclical decline in railway traffic. Witt Bowden of the Bureau of Labor Statistics has completed a study showing that in 1936 productivity of railway labor (measured in terms of average output per man-hour worked) was 32.8 per cent more than in 1926 and 80.9 per cent more than in 1916. The postponement of replacement work during the depression affected the employment of non-operating personnel adversely, but there has recently been

a resumption of expenditures for replacement. The average number of employees was 1,626,066 in 1916, 2,004,277 in 1920 (the peak year), 1,757,298 in 1926, less than 1,000,000 in 1933 and 1935, and 1,046,718 in 1936. With 1926 = 100, the index of employment for 1936 was 59.6. In 1937 there was an increase in the level of employment, as shown in the table below. The index is adjusted for seasonal variations.

INDEX OF RAILWAY EMPLOYMENT
(1923–25 = 100)

	1935	1936	1937
January	56.0	57.3	62.8
February	56.4	60.1	63.8
March	56.3	58.8	63.4
April	55.1	59.2	63.8
May	55.2	59.1	63.8
June	55.6	59.0	64.2
July	55.6	59.3	64.1
August	55.2	59.6	63.5
September	55.4	60.5	62.2
October	55.4	60.4	60.8
November	55.4	60.7	
December	56.4	62.1	

FARMS

The flow of population from farm to city areas as business activity accelerated from 1933 onward was described in THE AMERICAN YEAR BOOK, 1936. The trend continued in 1936 and 1937. The Census Bureau reported that 500,000 more persons went from rural regions to industrial centers in 1936 than from cities to farms, causing a net loss in farm population of 80,000 after the excess of farm births over farm deaths is allowed for. This compares with a net gain in farm population of 77,000 in 1933, 31,000 in 1934 and 8,000 in 1935. Although industrial recovery is always a factor in promoting the flow of population toward cities, the present trend is attributed largely to technological improvements in agricultural production which decrease the need for man-power on farms. The National Resources Committee reported that, whereas 89 man-hours were needed to grow and harvest 100 bushels of wheat in 1900, only 49 man-hours are now needed. The growing and harvesting of 100 bushels of corn required 147 man-hours in 1900 and 104 today. The general increase in output per agricultural worker from 1910 to 1930 was 41 per cent.

In 1937 production on farms was very active and bumper crops were harvested. The United States Bureau of Agricultural Economics publishes estimated farm employment figures based on reports from farmers. The table below shows the number of persons employed per 100 farms, based on reports from 19,940 farmers.

	(Family and Hired Labor Combined)					
	July 1, 1936	Aug. 1, 1936	Sept. 1, 1936	July 1, 1937	Aug. 1, 1937	Sept. 1, 1937
United States	324	314	332	326	317	316
New England	281	293	306	272	291	280
Middle Atlantic	264	271	264	273	281	272
East North Central	243	240	241	241	248	232
West North Central	238	226	230	239	234	223
South Atlantic	464	451	481	463	427	453
East South Central	468	443	506	475	450	454
West South Central	347	320	357	345	325	338
Mountain	272	264	279	267	270	261
Pacific	436	447	453	453	461	478

PUBLIC UTILITIES, TRADE AND HOTELS

Employment in public utilities is relatively stable, yet during the depression employment declines were experienced in this group. Figures from Moody's *Public Utilities*, covering 80 per cent of all telephone employees, show a decline from 364,045 employees in 1929 to 247,512 in 1935,

the sharpest decline occurring from 1929 to 1930. For another large unit in this group—the electric light and power industry—the National Bureau of Economic Research estimated the average number of employees from 1929 to 1934 as follows: 1929, 271,796; 1930, 279,916; 1931, 258,842; 1932, 225,557; 1933, 214,054; 1934, 227,813. The Bureau of Labor Statistics reported increases in employment in the utilities as a group in 1936 and 1937, although its revival slackened toward the end of 1937. Changes in the 1937 index of employment (1929 = 100) over the same month of 1936 are shown in the table below:

	Per Cent Change over Same Month in 1936				
	January	March	May	July	September
Telephone and Telegraph	+6.3	+7.3	+8.6	+9.1	+8.7
Power and Light	+6.9	+6.2	+6.0	+6.0	+5.3
Electric Railroads and Motorbus	+2.5	+2.1	+2.4	+1.4	+1.2
Wholesale Trade	+6.0	+7.6	+7.3	+6.1	+5.7
Retail Trade	+6.8	+8.1	+5.8	+5.3	+4.6
Hotels	+4.3	+4.9	+4.2	+3.4	+4.6

Substantial gains over the preceding year in November, 1937 were shown in the telephone and telegraph industry, hotels, and power and light.

PUBLIC EMPLOYMENT AND RELIEF WORK

The year 1937 was marked by a steady retrenchment of government expenditures for emergency public work. Sharp curtailment occurred in the expenditures of the Works Progress Administration, the principal agency of the Federal work program. In December 1936 the number of persons in need of relief employed under the Works Program was 2,076,000. In May, 1937, employment had declined to 1,930,000, and in September to 1,409,000. October brought a slight seasonal increase in employment. Employment in the CCC declined from 361,000 in January to 189,000 in September but a new enlistment period in October brought the number to 363,000. Other emergency work projects of the Federal Government (regular departments which undertook relief work and emergency agencies such as the PWA, the Farm Security Administration and the Rural Electrification Administration) showed an employment decline from 219,000 in January to 132,000 in October (preliminary). The level of employment on regular Federal construction projects was, however, higher in October, 1937 than in any of the preceding 12 months, reaching a peak of 218,000. Gains were reported in building construction, naval vessels, river, harbor and flood control, and streets and roads. Employment on the construction, repair, and maintenance of roads financed from state funds ranged from 131,000 in March to 194,000 in September. Federal employment in the regular branches in 1937 reached the highest point since the World War. In June, 1933, the civil service and non-civil service workers (exclusive of the relatively stable groups in the Executive, Judicial, Legislative and Military departments) stood at 572,091; in May, 1937, the figure was 829,193. Including the Executive, Judicial, Legislative and Military departments, Federal employment stood at over 1,000,000 in 1937.

PART-TIME EMPLOYMENT

The number of workers employed on a part-time basis remains unknown. Difficulties of measurement are complicated by variations in the definition of part-time employment; it may include not only men who are reduced to less than full-time employment while remaining attached

to the same plant or industry, but also casual labor. Voluntary part-time work is particularly difficult to measure because of the subjective element implied in the term. Statistics relating to part-time employment usually refer only to the first of these classes. As was pointed out in previous issues of THE AMERICAN YEAR BOOK, an increase in part-time employment was experienced early in the depression, and the influence of the codes was probably in the direction of "spreading work," *i.e.*, increasing part-time employment, rather than increasing hours worked. The stronger trade unions (clothing, printing) also supported the spread-work movement as an alternative to total unemployment for part of the labor force. The American Federation of Labor monthly records of union members on part-time show that the level of part-time work in 1937 was lower than in 1936, ranging from 19 to 20 per cent of those employed, as contrasted with a range of 19 to 23 per cent in 1936. The same source, however, noted an increase in the use of part-time workers for peak periods of activity as an industrial practice early in 1937, specifically in department stores and on the railroads. The Unemployment Census conducted by the Federal Government on Nov. 20, 1937, showed a count of 3,209,211 persons partially unemployed; it was stated that this figure was only 52 per cent accurate, making a possible total of 5,630,192. This may be compared with the total unemployment of 10,040,000 shown by this Census.

VOLUME OF UNEMPLOYMENT

The employment trends summarized in the preceding paragraphs suggest a marked diminution of unemployment in the early part of 1937, followed by a rapid increase in the last months of the year. Estimates for 1937, like those for preceding years, are based on the trend of employment, the estimated level of the labor supply and scattered sources of information. The four estimates most commonly quoted, those of the American Federation of Labor, National Industrial Conference Board, Alexander Hamilton Institute and Robert Nathan, all showed a steady decline in unemployment from January to September, 1937. In October a slight increase in the numbers unemployed was noted, and advance releases of the National Industrial Conference Board indicated a sharp rise in November. Dr. Isador Lubin of the United States Bureau of Labor Statistics testified before a Senatorial committee that the November–December drop in employment, 1,550,000, was sharper than the October–December drop in 1929. The WPA estimated that 2,000,000 became unemployed as a result of the business recession late in 1937, and that 1,000,000 more would be added by February, 1938. The following table shows the estimates of the National Industrial Conference Board and the American Federation of Labor for selected months:

	National Industrial Conference Board Estimate	American Federation of Labor Estimate
March, 1933.	15,939,000	15,653,000
March, 1934.	11,744,000	12,420,000
March, 1935.	11,929,000	12,608,000
March, 1936.	10,777,000	12,183,000
January, 1937	8,386,000	10,002,000
March, 1937.	7,415,000	9,367,000
Sept., 1937...	6,066,000*	8,296,000*

*Preliminary

The Federal Unemployment Census taken on Nov. 20, 1937, a voluntary registration by mail of unemployed persons throughout the nation, showed 7,822,912 then unemployed by actual count. This figure was estimated to have 72 per cent accuracy and the total suggested was therefore 10,040,000, or over 20 per cent of those usually gainfully occupied. It is to be noted that with the development of unemployment insurance a new source of information on employment and unemployment will become available in the next two years.

CHILD LABOR

By Courtenay Dinwiddie

General Secretary of the National Child Labor Committee

INCREASE IN CHILD EMPLOYMENT

The upward trend in child employment since the expiration of the NRA codes has continued unabated in States which have not raised by local statute their minimum age for employment. The number of 14- and 15-year-old children receiving first regular employment certificates for work during the last six months of 1936 increased 48 per cent over the number receiving such certificates in the last six months of 1935, according to figures compiled by the Children's Bureau of the U. S. Department of Labor from 12 States, the District of Columbia and 76 cities of 50,000 or more population in 18 other States, none of which has made basic changes in child labor laws. The numbers were 3,735 and 5,523 respectively.

Employment certificates which permit children to leave school for work are indicative of the general trend, but not of the actual extent, of child employment. They are not required for all occupations; in very few States do they include children engaged in agriculture and domestic service, and in some States include only employment in manufacturing and mechanical occupations. Moreover, employment certificate figures show only the number of children going to work legally and give no indication of the number employed in violation of the law.

THE FEDERAL CHILD LABOR AMENDMENT

The Child Labor Amendment became a major legislative issue in 1937, following a letter addressed by President Roosevelt on Jan. 8 to the governors of the States, which had not ratified, urging favorable action, and a statement two days later by former President Hoover supporting the President's position on this issue.

The legislatures of 19 States, which had not ratified, met in regular session, of which three (New Mexico, Nevada and Kansas) acted favorably. Kentucky ratified in special session, thus bringing to 28 the total number of ratifications since the Amendment was submitted to the States in 1924.

In Kansas and Kentucky the validity of ratification was challenged, and diametrically opposed opinions were handed down by the state courts. The main points involved in both cases were: (1) whether a State can ratify after prior rejection and (2) whether the Amendment has lost its potency because of the lapse of time since it was submitted by Congress to the States. The Kansas Supreme Court upheld the validity of ratification on Sept. 16. The Kentucky Court of Appeals on Oct. 2 ruled ratification "void and ineffective." A certified copy of the resolution of ratification had been filed by the Governor of Kentucky with the Secretary of State at Washington before court action was started. The Kansas Court granted a stay of execution to permit an appeal to the United States Supreme Court.

Action in the 16 States which met in regular session and failed to ratify was as follows: Connecticut—passed Senate, defeated in House; Delaware—passed House, defeated in Senate; Florida—died in House; Georgia—died in House; Maryland—defeated in House; Massachusetts—defeated in House and Senate; Missouri—defeated in House; Nebraska—defeated (unicameral); New York—passed Senate, defeated in House; North Carolina—defeated in House; Rhode Island—died in House and Senate; South Carolina—not introduced; South Dakota—defeated in House and Senate; Tennessee—defeated in House; Texas—defeated in Senate; and Vermont—not introduced.

The unfavorable action by state legislatures in 1937 was in sharp con-

flict with the results of the second poll on the Child Labor Amendment conducted by the American Institute of Public Opinion. This poll, made public in February, 1937, showed a majority for the Amendment in every State of the Union, ranging from 53 per cent in Minnesota (which has ratified) to 88 per cent in Rhode Island (which has not ratified). The average for the country as a whole was 76 per cent, as compared with 61 per cent in the first poll made in 1936.

STATE CHILD LABOR LEGISLATION

Although 43 state legislatures met in regular session in 1937, improvements in child labor legislation were comparatively slight. North Carolina made the most marked advance through enactment of a law establishing 16 years as the minimum age for work during school hours or in factories at any time, providing an eight-hour day and 40-hour week for children under 16 with combined hours of work and school not to exceed eight a day and a 9-hour day and 48-hour week for minors 16 to 18, and restricting the employment of minors 16 to 18 in hazardous occupations. North Carolina, however, defeated a bill to raise the age for school attendance from 14 to 16 years, thus being in the anomalous position of having forbidden employment during school hours under 16 but requiring school attendance only to 14.

South Carolina also extended to 16 years the minimum age for work during school hours and in factories at any time and raised its age for compulsory school attendance to 16, although allowing sweeping exemptions. The South Carolina law failed to limit hours of work for minors or provide a system of employment certificates without which enforcement is practically impossible.

Pennsylvania enacted a new school law which requires that by 1940 all young people between the ages of 16 and 18 who are not high school graduates and are not employed shall attend school, transportation being provided when necessary.

Illinois, Pennsylvania and Texas adopted excellent laws regulating industrial home work. The Pennsylvania law includes a clause permitting the outlawing of home work in industries where it is deemed injurious to general labor standards.

Changes in the street trades laws of Wisconsin and North Carolina offered an interesting contrast in their provisions fixing the employment status of the newsboy, a highly controversial point which determines the applicability of workmen's compensation laws to the newsboy. The North Carolina law establishes the parent or guardian of the child as the employer, thus exempting the publisher or dealer from liability in case of accident or damage. The Wisconsin law, on the other hand, definitely establishes the status of the newsboy as an employee of the publisher or dealer.

Florida amended its Workmen's Compensation Law to provide double compensation for an employee who at the time of injury was employed in violation of the child labor law. Several other States made minor changes in their laws relating to hours, night work, employment in dangerous occupations, and the issuance of work permits. On the other hand, bills establishing 16 years as the minimum age for employment during school hours were defeated in eight States—Georgia, Illinois, Massachusetts, Michigan, Nevada, New Jersey, Tennessee and Texas. Many of these had extensive provisions limiting hours and regulating night work for minors under 18, and prohibiting work in hazardous occupations.

A proposal in Florida to forbid the use of boys under 16 and girls under 18 in filling state contracts went down to defeat. Industrial home work measures were killed in Delaware, New Hampshire, New Jersey and West Virginia. Attempts to extend hour and night work limitations for minors were defeated in Florida, New Hampshire and Pennsylvania, and bills substantially extending the lists of hazardous occupations prohibited to minors were killed in Massachusetts and Texas.

FEDERAL LEGISLATION

The slow progress of the campaign for ratification of the Amendment, coupled with decisions of the U. S. Supreme Court in the spring of 1937 which indicated a more liberal interpretation of the interstate commerce clause, renewed interest in the possibility of Federal child labor legislation based on the interstate commerce power. Nearly 50 bills regulating child labor or including child labor among other provisions were introduced in Congress. These bills were in general of two types: (1) those modelled on the principle of legislation controlling the sale of prison-made goods and (2) those modelled on the principle of the first Federal Child Labor Law declared unconstitutional in 1917.

Hearings on Federal child labor bills were held before the Senate Interstate Commerce Committee in May. A sharp cleavage of opinion developed as to the most desirable method of child labor regulation. In general those who had been opposed to the Child Labor Amendment, including the National Association of Manufacturers, the American Bar Association, and the National Committee for the Protection of Child, Family, School and Church, spoke in favor of legislation based on the prison-made goods principle, while those had been supporting the Amendment, including the National Child Labor Committee, the National League of Women Voters, the National Consumers' League and representatives of the Federal Children's Bureau, favored legislation on the principle of the first Federal law. This controversy was renewed at the hearings on the Black-Connery Wage and Hour bill which included child labor provisions.

The separate child labor bill introduced by Senators Wheeler and Johnson based on the prison-made goods principle passed the Senate but was not acted upon by the House. The child labor provisions of the Black-Connery Wage and Hour bill as reported out by the Senate Committee incorporated the principle of the first Federal law, but these were thrown out on the floor of the Senate and the prison-made goods principle substituted. The House Committee on Labor restored the child labor provisions thrown out by the Senate but the bill did not reach a vote in the House.

In addition to Federal bills on child labor, several new amendments to the United States Constitution dealing with child labor were introduced. The only one to receive serious consideration was that proposed by Senator Arthur H. Vandenberg which was reported out by the Senate Judiciary Committee but not acted upon. This Amendment differs from the Amendment now before the States in that it omits the word "regulate," substitutes the phrase "employment for hire" for "labor," and reduces the age minimum to 16 years. It stipulates that ratification must be within seven years, and by state conventions rather than legislatures.

The only Federal legislation enacted which affects child labor was the Sugar Act, signed by President Roosevelt on Sept. 1, which sets a 14-year age minimum for employment in the sugar beet fields and an eight-hour day for those between 14 and 16 years. These provisions do not apply to children of owners.

SHRIMP INDUSTRY SURVEY

Surveys of child labor were conducted by the National Child Labor Committee in two industries during 1937, the shrimp industry of the southern Gulf States and the tiff mines of Missouri. The Committee found that, except in Mississippi where moderate gains had been secured through union activity, children were found to be an important factor in the labor force of shrimp picking and heading sheds. Its investigators estimated that 550 children under 16 years were working in 47 sheds which it visited in an extensive area along the Gulf Coast. Hours were irregular and dependent upon the time and extent of the shrimp "catch." Children started work anywhere from 3 A.M. to 7 A.M. with the large number about 4:30 A.M. continuing for 4 to 6 hours. Some children returned for afternoon work

beginning between 2:30 and 4:00 and continuing until the catch was completed, sometimes until 9:30 or later. Wages of a sampling of 18 children taken at random ranged from 5 to 25 cents, with the majority making between 14 and 17 cents.

TIFF MINE INDUSTRY

Serious exploitation of children was found by the Committee in the tiff mines of Missouri which produce 57 per cent of the crude barite manufactured in the United States. The Committee found that 8.4 per cent of all children of compulsory school attendance age (7 to 15 years, inclusive) in the area were out of school for work in the mines and many children attending school worked outside of school hours. An intensive study of 86 children out of school for tiff mine work revealed that 32 were 13 years or younger and nine were girls. Half of the children stated that they had started work in tiff mines before they were 12 years old and 21 before they were 10 years. The average number of working hours per day was 7.4; 20 per cent of the children worked nine or 10 hours. Earnings averaged $2.87 a week. Although 54 of these children were 14 and 15 years of age only seven had completed the eighth grade. Half of the children 12 years or older had not completed even the third grade.

The Committee stated that the tiff mine area is "a sore spot in the industrial life of the United States. Poverty, ignorance, illiteracy, child labor, with children from 6 or 7 years up working regularly in the tiff diggings, child marriages, malnutrition, and disease characterize this section of Missouri where existence is dependent upon and dominated by the tiff mine industry."

NEW PUBLICATIONS

The American Child (published monthly). *Annual Report for the Year Ending September 30, 1937,* by Courtenay Dinwiddie; *Annual Summary of State Legislation,* 1937; *Child Labor Facts—1937; Handbook on the Federal Child Labor Amendment,* revised January, 1937; *A Study Outline on Pending Federal Child Labor Legislation,* by Gertrude Folks Zimand, September, 1937; *Congress and Child Labor,* November, 1937; *Ratify the Child Labor Amendment,* by Frank P. Walsh, February, 1937; *A National Evil,* by George Z. Medalie, February, 1937. (National Child Labor Committee, New York.)

Selected Bibliography on Child Labor and Related Problems, May, 1937; *Child Labor in the United States,* May, 1937; *Factors Affecting an 18-Year Minimum Age for Employment of Girls in Cotton-Textile Manufacturing under the Public Contracts Act,* December, 1936; *State Compulsory School Attendance Standards Affecting the Employment of Minors and State Child Labor Standards,* revised, 1937; *Summary of State Laws Affecting the Employment of Minors in Fac-Labor Standards,* revised, 1937; (Children's Bureau, U. S. Department of Labor, Washington, D.C.)

Child Workers in America, by Katharine D. Lumpkin and Dorothy W. Douglas, 1937. (Robert M. McBride & Co., New York, N.Y.)

Control of Child Labor, by Bryant Putney. (*Editorial Research Reports,* 1013 Thirteenth St., N.W., Washington, D.C.)

The Newspaper Boy—Merchant or Employee? by Charles A. Rohleder, 1937. (The Newspaper Boys of America, Inc., Indianapolis.)

To Regulate the Products of Child Labor, Hearings before the Committee on Interstate Commerce, U. S. Senate, 75th Congress, First Session on S. 592, S. 1976, S. 2068, S. 2226, and S. 2345, May 12, 18 and 20, 1937; *Fair Labor Standards Act of 1937,* Joint Hearings Before the Committee on Education and Labor, U. S. Senate and the Committee on Labor, House of Representatives, 75th Congress, First Session on S. 2475 and H. R. 7200, Part 2, June 7 to 15, 1937, pp. 381–410, 415–417, 429–432. (U. S. Government Printing Office, Washington, D.C.)

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Assn. for Labor Legislation, 131 E. 23rd St., New York City.

American Federation of Labor, A. F. of L. Building, 9th and Massachusetts Ave., N.W., Washington, D.C.

American Federation of Musicians, 1450 Broadway, New York City.

International Assn. of Garment Manufactures, 40 Worth St., New York City.

International Assn. of Machinists, 265 W. 14th Street, New York City.

International Longshoremen's Assn., 265 W. 14th Street, New York City.

International Seamen's Union of America, 666 Lake Shore Drive, Chicago, Ill.

Junior Order of United American Mechanics, 3029 N. Broad St., Philadelphia, Pa.

League for Independent Political Action, 112 E. 19th Street, New York City.

League for Industrial Democracy, 315 Fourth Ave., New York City.

Marine Engineer's Assn., 157 Chambers St., New York City.

National Assn. of Letter Carriers, A. F. of L. Building, 9th and Massachusetts Ave., N.W., Washington, D.C.

National Civic Federation, 570 Lexington Ave., New York City.

National Federation of Post Office Clerks, A. F. of L. Building, 9th and Massachusetts Ave., N.W., Washington, D.C.

National Industrial Conference Board, 247 Park Ave., New York City.

National Industrial Council, 11 W. 42nd St., New York City.

Pilots' Association, 119 Broad St., New York City.

United Licence Officers, 15 Whitehall St., New York City.

DIVISION XVII

RELIGION AND RELIGIOUS ORGANIZATIONS

PROTESTANT DENOMINATIONAL ACTIVITIES

By Herman C. Weber

Editor, *Year Book of American Churches*

REVIVAL OF INTEREST IN THE CHURCH

The outstanding event of the year 1937 among the Protestant bodies was without question the ecumenical conferences held in Oxford, England, and in Edinburgh, Scotland. The first called together representatives of all the larger bodies in Protestantism not only from Great Britain and the United States, but from all countries where the larger bodies have developed national Churches. In addition to the European Churches in the Scandinavian countries, a small Methodist delegation was present from Protestantism in Germany, the Reformed, Lutheran and Evangelical groups having been denied passports. The Eastern Orthodox Church was also represented by an influential delegation.

Many authorities had been enlisted for preliminary studies of the subjects which were presented for discussion and numerous documents were circulated for criticism long before the meeting. The result was a very high-powered intellectual exploration of the points of difference in the divided Protestant world and an evaluation of the points of agreement. The utmost frankness was reported in the recognition of opposing points of view with a consequent surprising discovery that there were also many points of agreement and the looming possibility of still further understanding and accommodation. The Oxford conference discussed the problems of Life and Work and the Edinburgh conference, Faith and Order. Many delegates attended both meetings—enough to raise the question at the very start whether two such conferences were needed. The result was a definite movement now in process to unite the two sponsoring commissions into a World Council of Churches and to propose more frequent meetings. Only the Roman Catholic Church was unrepresented in these gatherings, so that their title to ecumenicity was more nearly approached than had ever been the case before.

The importance of these gatherings for Protestantism in the United States lies in the carry-over of their discussions of the place and the function of the Church in the world of today into thousands of groups in America. The apparent importance of the Churches in stemming the tide of paganism, sensuality, immoralism and materialistic philosophy has raised the question in many minds whether the Churches were showing any survival value in America. The incapacity of state Churches in Europe seemed to many to be demonstrated by their submission or ineffective opposition to totalitarian schemes of religion and morals, and to many burdened church members the beginning of such impotence in this country seemed already demonstrable. The study of the new appraisals of the place of the Church has begun to penetrate into Protestantism's mind, and the continued effect of the conferences in Great Britain, as held last summer, will without question result in a replenishment of denominational and interdenominational programs for

a stronger and better Church development.

PREACHING MISSION

The Preaching Mission of 1936 continued over into 1937 in cities and areas of lesser population, and was followed in the late spring and fall by a Teaching Mission which was designed to reach active church people and give them training and inspiration for the extension of the influence of religion in their own homes and communities. This Mission was under the fostering care of the International Council of Religious Education which has ties with many Federations of Churches in the larger centers and in county and state areas. Experts in various fields of education were enlisted as resource-personnel and schedules were worked out as for the Preaching Mission. The cities of the Northwest, as far as Seattle, were visited. Centers like Louisville, Cleveland, Philadelphia, Chicago and others had already been visited, and many more have been approached for the organization of what have been called Schools for Christian Living. In all of these interdenominational schools, the influence of the conferences abroad have been felt, and new group and personal revaluations of the Church as an instrument for national well-being and righteousness have been made.

PROGRESS TOWARD UNION

The merging of the two ecclesiastical groups which have been discussing Life and Work on the one hand and Faith and Order on the other, has greatly stimulated the will to union in divided Protestantism. The Episcopal triennial convention raised the question of union with the Presbyterian Church, U.S.A. The union of the Methodist Episcopal Church, the Methodist Episcopal Church South, and the Methodist Protestant Church has been greatly furthered. The voting in the conferences has been expedited and in November it was reported that a majority was assured sufficiently overpowering to make the union a certainty. The Presbyterian Church U.S., appointed a standing committee on co-operation and union, a new move to keep an open door towards the Presbyterian Church U.S.A. whose overtures for union have been continuously rejected. The Disciples group has raised the question of approach to union with other congregational and immersionist bodies. The Federal Council of the Churches of Christ in America appointed a new commission to add to its other important commissions for the purpose of exploring the possibilities of union. Of this commission the Rev. Ivan Lee Holt D.D., of St. Louis, is the chairman, and its secretary is the Rev. H. Paul Douglass, D.D.

STEWARDSHIP CONFERENCES

The stewardship movement which was revitalized in 1936 at the annual conference of 23 denominations held at Dayton, O., in November, continued to make progress during 1937. Its leaders became convinced that the growing deteriorating influences in American community life could be best combated by a challenge to Christian people everywhere to take their religion very seriously and to commit themselves to its implications with at least the abandon of communist or totalitarian or nationalistic enthusiasts or believers on the other side of the sea. These views were advanced in every possible way during the year and culminated in a conference in Philadelphia in November at whose sessions the stewardship approach to religion, to a sound social order, to the problems of youth, to sound personal and church finance was explored. Several hundred leaders of denominational life and programs were present and carried the ideals of the movement into their church promotional programs.

CHURCH STATISTICS

The accompanying table condenses the reports on church memberships as collected for the *Christian Herald* annual report which is published during the late spring each year. The editor, the Rev. George Linn Kieffer, D.D., died very unexpectedly on April 25, 1937, while delivering an

TABLE OF CHURCH MEMBERSHIPS

(The years vary for the different bodies, the majority using the calendar year. The figures are mostly for the year 1936, or for years ending some time in 1936.)

Larger Bodies (Over 50,000 Members)	Churches	Inclusive Memberships All Classifications	Comparable Memberships 13 yrs. and over
Adventists, Seventh Day	2,326	152,961	148,831
Assemblies of God	3,444	173,349	155,495
Baptists, Northern	7,669	1,454,269	1,391,736
Baptists, Southern	24,671	4,482,078	4,208,671
*Baptists, American Association	2,662	263,484	260,876
Baptists, National Convention (Col.)	24,000	3,746,590	3,428,130
*Baptists, Free Will	397	79,650	78,227
*Baptists, Primitive	2,700	103,125	102,919
Brethren, Conservative Dunkers	1,026	161,503	151,005
Brethren, United	2,850	410,897	373,094
*Church of Christ, Scientist	2,130	202,098	202,098
Church of God (Anderson, Ind.)	1,338	82,893	79,329
*Church of God in Christ (Col.)	1,200	200,470	190,470
Church of the Nazarene	2,255	133,516	127,054
Congregational and Christian	6,048	1,010,776	983,485
Disciples of Christ	8,105	1,602,052	1,488,307
*Churches of Christ	6,226	433,714	433,714
Episcopal, Protestant	7,353	1,918,329	1,415,727
*Eastern Orthodox: Greek	255	289,000	279,000
*Eastern Orthodox: Russian	346	526,000	377,142
*Eastern Orthodox: Serbian	35	100,000	75,000
*Eastern Orthodox: Syrian	78	125,000	99,000
Eastern Separate: Armenian	51	105,250	94,196
Evangelical	1,959	234,257	223,183
Evangelical and Reformed	2,934	849,205	642,149
Foursquare Gospel	367	257,635	219,050
Friends (Orthodox)	678	85,257	71,190
*Jewish Congregations	3,118	4,081,242	2,930,332
Latter Day Saints	1,392	678,203	521,538
Latter Day Saints, Reorganized	575	99,492	93,300
Lutheran, United	3,718	1,523,022	1,127,036
Lutheran, American Conference	6,322	1,441,615	1,024,858
Lutheran, Synodical Conference	5,178	1,495,495	1,054,160
Methodist Episcopal	24,421	4,349,244	3,966,511
Methodist Episcopal, South	16,253	2,787,217	2,463,900
Methodist Episcopal: African	7,115	650,000	581,750
Methodist Episcopal: African Zion	4,205	597,785	520,671
Methodist Episcopal: Colored	4,258	379,436	340,354
Methodist Protestant	2,115	196,480	182,530
Polish National Catholic	144	186,000	136,000
Presbyterian: Cumberland	1,140	70,215	66,353
Presbyterian: United	867	179,115	170,876
Presbyterian: U.S.(South)	3,516	482,178	446,015
Presbyterian: U.S.A.	8,796	1,912,584	1,836,084
Reformed Christian	286	117,972	79,985
Reformed in America	720	240,660	236,809
Roman Catholic	18,379	20,831,139	14,956,758
Salvation Army	1,645	255,765	102,306
Unitarians	376	98,600	97,614
Universalists	543	51,159	50,494
Totals	228,185	61,887,976	50,285,312
Totals reported last year	227,744	61,212,998	49,745,742
Gains	441	674,978	539,570

NOTE: There is a statistical gain in this table due to the inclusion for the first time of the Eastern Orthodox Syrian figures which were reported to have reached 125,000 gross and 99,000 net. These figures have not been checked, and the total gains for the year as reported will need to be reduced. However, all the bodies which are starred are reported as of 1926, the latest official figures available. The inclusion of their gains during the decade would greatly swell the gains, both net and gross, as reported above.

The 200-Plus Religious Bodies in the U.S.

	Churches	Gross Membership	Net Membership
The Larger Bodies as above	228,185	61,887,976	50,285,312
All Other Bodies	17,237	1,605,060	1,460,595
GRAND TOTAL	245,422	63,493,036	51,745,907

NOTE: Connected with organized religion, in churches and synagogues, under greatly varying definitions of membership or relationship, but authoritatively reported, 51,745,907 persons, 13 years and over, out of 87,160,604 citizens, 13 years of age and up, or 59.3 per cent.

anniversary address in a church which he had once served. Dr. Kieffer was a trained statistician, editor of the internationally recognized *Lutheran World Almanac,* and a competent and meticulous compiler of statistics. He organized and was the president of the Association of Statisticians of American Religious Bodies from its beginning. From his tables the information presented here is abstracted. The reports are the official reports of the clerks or statisticians of each body. Some of them are necessarily in the form of estimates or are partly estimated owing to the very loose organizational setup of some separatist groups. Most of them are, however, very carefully prepared and are understatements of memberships (according to the official definition of membership in each body—these differ very widely) rather than inflated figures.

The statement made in the public press by the otherwise accurate president of the Babson Statistical Organization that these figures contain "millions of dead persons" and are not reliable at all will not bear examination. The spiritual efficiency of many thousands of these reported "church and synagogue members" may be called into question by any cynic, but not their statistical relation. The mass of people in the United States who are in contractual relationship with organized religion through some promise, vow, act of consecration, or commitment ritual, is so impressive that it does quite naturally raise questions of accuracy. Of the 87,000,000 people in the citizenship of the U.S.A., who are 13 years old or more, 51,000,000 are in "good and regular standing" in their section of organized religion. The Association of Statisticians has been very keen about the collecting of these figures by Dr. Kieffer and has rendered him every assistance in its power. The government census authorities who have collected the official figures in the decennial census of religious bodies have worked in very close cooperation with the Association and with Dr. Kieffer. The Rev. H. C. Weber, D.D., statistical authority in the Presbyterian Church, U.S.A., author of a statistical study of that body covering its records for 100 years, and author of a graphic survey of Protestant evangelistic productivity (*Evangelism: a Graphic Survey,* Macmillan), has been chosen to succeed Dr. Kieffer in the collection of this annual report of membership.

PRESBYTERIAN CHURCH, U.S.A.

This body, the largest group of Presbyterians in the world, met in Columbus, O., May 27, 1937. The Rev. William Hiram Foulkes, D.D., pastor of the Broad Street Presbyterian Church, Newark, N.J., was elected moderator. Dr. Foulkes made a deep impression in the forward movement after the World War when, under his leadership, the Presbyterian Church lifted the level of its giving—$10,000,000 in one year. He is well known in interdenominational circles as the chairman of the committee which directed the Preaching Mission of last year across the continent. The Assembly met in a spirit of good-

will without the presence of a small but vocal group of dissident pastors and elders who withdrew from the denomination a year ago. The report of new membership for the year was encouraging. In spite of the withdrawals, an increase in membership was announced. The current expenses of the churches increased during the year nearly $2,000,000 and the benevolences about $78,000.

The deliverances of the Assembly with reference to social questions engaged the attention of the commissioners perhaps as much as any matter brought to the floor. The Assembly of 1936 created a committee on Social Welfare to which all resolutions concerning social matters were to be referred. This committee brought in a report which included 100 or more resolutions which were finally boiled down to 68, very well handled by the committee chairman, the Rev. Paul C. Johnston, D.D., of Lincoln, Neb. The section on war developed a warm debate and was finally worked over into a compromise resolution authorizing a committee to prepare amendments to the Westminster Confession and other governing documents which would bring them into line with the teachings of Jesus with respect to the powers of civil magistrates and the Church's opposition to war. An overture called the "Cayuga" overture, to throw out one formula in the Confession tacitly endorsing war, failed by a very narrow margin in the presbyteries (chiefly the smaller ones). Attention was called to the fact that the 150th or sesquicentennial session of the Assembly (organized in 1789 as successor to the Synod of New York and Philadelphia) would be held in Philadelphia May 26, 1938. Arrangements were ordered for the appropriate celebration of this event. The Board of Foreign Missions asked the churches during the autumn for a fund of $1,000,000 to celebrate its hundredth anniversary, the observance being set for the last Sunday in October with centennial dinners, religious services and a round-the-world broadcast to all mission stations.

THE PRESBYTERIAN CHURCH, U.S.

The southern branch of the Presbyterian Church met at Montreat, N.C., in May, 1937, convened by the retiring moderator, the Rev P. Frank Price of Nanking, China, a foreign missionary honored with the highest office in the gift of the Church. The new moderator, elected on the first day of the session, was the Rev. D. Clay Lilly. A large number of debatable matters came before the Assembly, most of which were handled by reference to committees or by arrangements for discussions in the presbyteries during the year. The question of the return of the Southern Presbyterian Church to the Federal Council was again raised and made a subject of discussion during the year. The resumption of union-conferences with the Presbyterian Church, U.S.A., was also debated and a committee was appointed much like the standing committee of the U.S..A body on cooperation and union. The report of the committee on social and moral welfare was a lengthy one and produced a vociferous reaction from a minority in the Assembly. Its deliverances were not adopted as expressing the mind of the Assembly, but were "received" and all its recommendations were approved. Some of these were uncompromising.

It was overwhelmingly resolved "that our ministers and church leaders seek faithfully to ascertain and interpret significant facts in the field of race relations for their people; and that as a Church and as individual Christians, we strive more earnestly to apply the teachings of Christ in all our relations with other people." The Assembly also voted that the Church declare unequivocally that war as a method of settling international disputes was utterly opposed to the spirit of Christ. The Assembly was greatly concerned over the missionary situation in Korea where the Japanese Government was insisting that obeisance at shrines should be obligatory on all school children and their teachers. Presbyterian missionaries, both of the U.S.

and the U.S.A. branches, have done a notable piece of educational work in that country and the whole enterprise is threatened by the government requirement. An effort was made to have the Assembly send greetings to the dissident conservative group which recently was expelled from the U.S.A. branch, but this was defeated.

THE NORTHERN BAPTISTS

The Northern Baptist Convention met in Philadelphia in May, convening under the gavel of its layman president, H. B. Clark of North Adams, Mass. Its choice for presiding officer for the ensuing year fell on a representative of the fundamentalist section of the Convention, the Rev. Earle V. Pierce, D.D., of the Lake Harriet Baptist Church of Minneapolis, Minn. Dr. Pierce, however, declared that in his office he would not represent any one section of the Convention and this was expected from his temperament, summed up at the convention by the phrase "co-operating Fundamentalist." About 5,000 delegates attended the Convention and were especially interested in an unusual exhibit of Baptist agencies and activities. A suggestion by the retiring president, himself a tither, that the Northern Convention embark on an adventure in tithing by each member promising ten per cent of his income for three months, was approved and recommended.

THE SOUTHERN BAPTISTS

The Southern Baptist Convention met in May, 1937, in New Orleans. It was convened by its president, the Rev. John R. Sampey, D.D., head of the Baptist Seminary at Louisville, Ky. About 8,000 "messengers" and visitors were in attendance. Dr. Sampey was re-elected president for another year. His presidential address discussed the relationship of Baptist principles and history to the imminence of totalitarian states and warned that Baptists must not surrender their historic contention for the separation of church and state. He also asked for representation of the Baptist group in the South at the Oxford and Edinburgh conferences in spite of the aversion of Baptists to anything but their principle "of the competency of the individual to do business with God through Christ alone." Dr. Sampey became the representative of the Baptist group at both these conferences during the summer. Comparatively little attention was directed toward social questions in the discussions except for deliverances against the liquor traffic, its connections with county and state government, its increasing danger through peril on highways and the involvement of church members in the traffic.

The Hundred Thousand Club, designed to enlist members for special giving to the benevolences of the Convention, reported continuing success. Nearly $200,000 was reported received during the year, and it was stated that since 1933, more than $2,000,000 of Southern Baptist board debts had been paid through this organization-plan. The statistician of the Convention, Dr. Aldredge, reported that there had been 191,993 baptisms during the year and that the net increase in membership was 92,898. The financial report showed that Southern Baptists had contributed about $24,000,000 toward the local expenses of their churches and not quite $5,000,000 toward general causes. It was brought out, however, that the level of giving per member was still the lowest among the major Protestant bodies for missionary purposes. The Convention was preceded by a pastors' conference which drew a large attendance and was manned by outstanding speakers under the direction of the Rev. M. E. Dodd, D.D., of Shreveport, La. Laymen also gathered in large numbers to be addressed by distinguished lay churchmen. The outstanding subject before them was the stewardship of the tithe.

REFORMED CHURCH IN AMERICA

The General Synod of the Reformed Church in America, commonly called the Dutch Reformed Church, met in Asbury Park, N.J., June 3–8,

1937, in its 131st annual session. It was convened by its president, the Rev. Raymond Clee, D.D., of Jersey City, N.J., and elected a layman (for the first time in its history) to preside—Wynard Wichers, president of Hope College, Holland, Mich. As vice-president, the Synod chose the Rev. Prof. J. W. Beardslee, D.D., of the Seminary at New Brunswick, N.J. The Synod was larger than usual in its attendance, but not very productive of either debate or action. The committee on international justice and good-will aroused considerable debate, and in the end the Synod expressed itself in very moderate terms. An effort to raise an issue about relation to the Federal Council of Churches of Christ in America failed, and participation and support was voted as usual.

THE PROTESTANT EPISCOPAL CHURCH

The triennial Convention of the Protestant Episcopal Church began in Cincinnati, O., Oct. 6, 1937, in the stadium of the University of Cincinnati, with a service attended by 10,000 persons at which the Rt. Rev. Edward L. Parsons, Bishop of California, preached the sermon. The service included a processional of 1,400 dignitaries before an imposing and beautiful outdoor altar. The Convention sat in three divisions, the House of Bishops, presided over by the Rt. Rev. James Wolfe Perry, D.D.; the House of Clerical and Lay Deputies, the Rev. ZeBarney Philipps of Washington, D.C., re-elected president; and the Woman's Auxiliary. The sessions continued over 12 legislative days and in the different Houses, a bewildering variety of subjects receiving attention. Members felt that, despite some contentious matters and great differences in type of churchmanship in this body, there had been less partisanship, more hopefulness and greater agreement than ever before.

The three most important matters of general interest were the Church's position on marriage and divorce, the proposal for a presiding bishop (some thought an "archbishop") and the world council of churches as proposed at Edinburgh. The liberalization of the canon on marriage and divorce had been recommended 10–1 by a commission, but was decisively beaten in the House of Deputies. The proposal for an "archbishop" was settled finally in favor of the last plan and three bishops were put in nomination. Write-in names, however, received more consideration than the formal nominees and on the second ballot in the House of Bishops, the Rt. Rev. Henry St. George Tucker, Bishop of Virginia, received a majority and was unanimously elected by both Houses. Bishop Tucker is a low churchman, was for a time Episcopal bishop of Kyoto, Japan, and president of St. Paul's College in Tokyo. In 1926, he was elected bishop of Virginia. The presiding bishop was given responsibility for the Church's missionary and educational work as head of the National Council. He was welcomed in New York to this office at a service at St. Thomas' Church early in January, 1937. In view of this arrangement for the presiding bishop, there was pressure to expand the work of the National Council and the program for the triennium to assume importance. It was decided to recommend the raising of a fund of $300,000 for the needs of Chinese sufferers from the Japanese invasion. The women reported a United Thank Offering of $861,000, registering an increase over the mark reached in 1934 of $72,000.

THE METHODIST EPISCOPAL CHURCH

The next conference of the Methodist Episcopal Church will not be held until 1940. The program of the conference held in 1936 is being put into operation by the various boards and agencies and by the board of bishops. One publicized activity has been the Million Unit Plan, a movement to enlist 1,000,000 givers prepared to do something extra every year for the replenishment of the agency budgets, many of which have been faced with heavy deficits during the depression period. The vot-

ing on the plan for merger with the Methodist Episcopal Church South, and the Methodist Protestant Church has proceeded without interruption and with satisfactory majorities in favor of the plan.

THE LUTHERAN CHURCH

The year 1937 was marked by definite and determined efforts on the part of a number of Lutheran bodies to deepen the spirituality of their memberships and to increase the effectiveness of their work. In the United Lutheran Church in America a comprehensive Promotional Plan was conducted with three major purposes in view: first, the betterment of the spiritual state of its membership; second, the advancement of its service program; and, third, the necessary educational training of church workers. Nearly 300 regional meetings with pastors, officers and leaders of the churches, were held, and special literature in the interest of this program was issued. To afford an opportunity to pastors to meet together for a week to discuss the theological and moral problems of the day, Luther Academy at Wartburg Seminary, Dubuque, Iowa, was founded. A similar Pastors' Institute was also held at Fortune Lake, Michigan. Under the auspices of the American Lutheran Conference, a Preaching Mission was conducted during November in ten important Lutheran centers in the middle West and Pacific Northwest. Intensive preparation for the special presentation of its program in 1938 was made by the Board of American Missions. Lutherans suffered the loss of a number of prominent leaders in 1937, among whom were Dr. G. L. Kieffer, statistician and reference librarian of the National Lutheran Council and president of the Association of Statisticians of American Religious Bodies; Dr. C. C. Hein, president of the American Lutheran Church; and Dr. Paul W. Koller, general secretary of the Board of Foreign Missions of the United Lutheran Church in America. The Executive Committee of the Lutheran World Convention met in Amsterdam, Holland, and decided to hold the Fourth Lutheran World Convention in America in 1940.

INTERDENOMINATIONAL ACTIVITIES

By Preston King Sheldon

Editor and Writer

CHURCH UNITY

An evangelistic tour of the United States undertaken through the fall of 1936 and carried on by the Federal Council of the Churches of Christ in America in 28 cities, was followed with plans early in 1937 for extending it through 15 additional cities and neighboring communities. The plans were carried into effect at each stop by holding preaching services, conferences for ministers, special meetings for laymen, women and young people, educational seminars and public meetings for four days. The tour was the continuation of a National Preaching Mission and was promoted as a "United Christian Advance," among members of Protestant churches.

Dr. Harry C. Munro of the International Council of Religious Education was elected executive chairman of the joint staffs of the cooperating interdenominational groups. Emphasis was put upon "Building Together the Christian Community" by starting in each city a "School in Christian Living." Adult education was given emphasis and also the United Youth Movement and the Laymen's Movement for Reaching the Unchurched.

Meetings were held shortly after Easter in Denver, Minneapolis and St. Paul. In the fall the schedule

was started with meetings in Salt Lake City, Portland, Me., and Albany, N.Y. As the tour progressed church leaders who had attended the central meetings conducted additional meetings, spreading the influence of the national effort over wide adjoining areas.

The idea of church unity came to the front throughout the tour of the preaching mission in 1936, when Dr. E. Stanley Jones, an American Methodist Episcopal missionary in India, principal speaker on the tour, called for a "Church of Christ in America," as a central, unified group, with branches formed by existing denominations. Dr. Jones spoke in New York in December, 1936, at Madison Square Garden, at probably the largest union Protestant gathering ever held in the city, when 18,000 persons heard him make this plea. This was the last of the 28 stops.

John D. Rockefeller voiced a similar appeal over the radio Feb. 17, 1937, in an address for Methodists who were assembled all over the country in a rally. Dr. Jones spoke on the same program and warned against the possibility of the Christian Church becoming linked with fascism against communism, saying such an alliance would mean the collapse of organized religion. He urged fellow Christians to drop "pink-tea attitudes" and to make an attempt "to show the way out" of world chaos. A farewell rally for Dr. Jones was held March 13 at the Collegiate Reformed Church of St. Nicholas, New York City, at which he repeated the appeal for unity.

NEW CHRISTIAN UNITY COMMISSION

As a result of an impetus given to a common desire which grew out of experiences at the meetings held by the National Preaching Mission, the executive committee of the Federal Council at its April meeting created a Commission for the Study of Christian Unity. Its work was begun Oct. 1, with Dr. Ivan Lee Holt of St. Louis, former president of the Council, as chairman. H. Paul Douglass was made executive secretary.

The Council's executive committee set forth the Commission's aims, stating that the Commission was "expected to carry on a continuous educational program which would produce attitudes favorable to an advance in unity and readiness to give open-minded consideration to whatever plans seem most promising." Care was to "be taken to guard against creating the impression that unity would necessarily mean creating a highly centralized administration."

The appointment of the new commission was to "emphasize the fact that there is a real desire to move in the direction of some larger integration of our Protestant forces than now exists. Since it is obvious that there is as yet no general agreement as to the solution of the problem, the Commission's primary method" was recommended as "that of objective study and research." And any final decision would, according to the plan, "rest with the churches themselves, the Council's function being strictly exploratory and advisory." Further suggestions were that such a program should include the following as aspects *for* consideration:

1. The conditions that create the demand for a greater unity than now exists—a. overchurching in local areas, b. inefficient use of resources, c. the meaninglessness of divisions when transplanted to the mission fields where new churches are being created, d. the lack of moral authority in a Church which appeals for unity in the world at large when it has such insufficient unity within itself, e. the impetus which larger unity would give to a great spiritual advance—foregleams of which were seen in the National Preaching Mission.

2. The development of co-operation and federation as the beginnings of a greater unity—a. in local communities, b. in States, c. in the nation, and d. on an ecumenical (or world) scale.

3. The local demand for unity—community experiments such as federated and union churches and the larger parish plan.

4. The securing of a large measure of unified administration—the possibility of delegating substantial responsibilities and functions to central agencies like the Federal Council and Home Missions Council should be explored and a study made as to what specific functions now fulfilled by denominational agencies could be better discharged by an interdenominational body.

5. Unions already achieved and current proposals for union of denominations not widely separated by differences of faith and order, *e.g.*, the reunion of Methodism, Lutheran unions, present consultations between the Evangelical Church and the United Brethren.

6. Proposals for the reorganization of American Protestantism—such a proposal as E. Stanley Jones's for "The Church of Christ in America" with denominational branches should be analyzed and made the subject for widespread discussion. Other proposals, some of them looking to complete organic union, will also doubtless be on the horizon and will call for similar study.

7. Calling church members to consider prayerfully what is the will of God for the unity of the Church.

The executive committee recommended "the continuous collection, publication and popular dissemination of information and suggestion in the whole field," so that "the Commission would become a central point where people could obtain information about every proposal and undertaking aimed to secure greater Christian unity—in the local community, in America, in other lands and in the world at large."

A preliminary meeting of members of the new commission was held Sept. 24 to formulate plans for the launching of its undertaking. Its deliberations were stimulated by the results of conferences that were held on life and work at Oxford, England, July 12–25 and on faith and order at Edinburgh, Scotland, Aug 3–19. Although set up on distinctly different though related plans, a new feeling of world-wide unity sprang from them.

THE OXFORD CONFERENCE

The Oxford Conference delt with the problems of Church, community, state, and the nations, including the relations of the Church with the social order and education and what should be its attitude toward war. The chief question studied at Edinburgh was the relation of churches to each other. A proposal that a World Council of Churches be set up as a voice for non–Roman Catholic Christianity, was approved in principle by both conferences. Each appointed seven representatives to a "constituent committee" which met Aug. 19 in London and elected the Archbishop of York as chairman. A join Committee was set up in New York and met Sept. 30. It approved a proposal to call an electoral conference in January, 1938, to which each Christian Church in the United States was invited to send a representative. This electoral conference was to select ten representatives to attend a Provisional Conference of world delegates, in May, 1938, in Holland, to draw up a constitution for the proposed World Council.

Meanwhile the Federal Council's new commission was at work on its studies under the leadership of Dr. Douglass who started with the proposals from Oxford and Edinburgh as the basis.

The plan for a World Council of Churches grew out of a study by a committee of 35 members created in 1936 by the Universal Christian Council for Life and Work and the World Conference on Faith and Order. It met at Westfield College, London, July 8–10, 1937 to formulate the proposal subsequently approved at Oxford and Edinburgh. The members represented Anglican, Lutheran, Reformed, Eastern Orthodox (Greek Catholic) and "Free Church" viewpoints. The World Council as proposed was intended to operate through a General Assembly of about 200 delegates named directly by cooperating churches, and under the plan would meet every five years. A letter of invitation was sent to all the churches represented at previous

meetings under the auspices of the Universal Christian Council for Life and Work and the World Conference on Faith and Order.

Three major community problems were called to the attention of the delegates at Oxford. 1. National egotism which finds in one's own nation a final revelation of God must be repudiated and irreconcilably opposed by the Christian conscience. In a supplemental report the declaration was made that "every kind of national egotism, where the love of one's own nation leads to the suppression of other nationalities or minorities, is sin and rebellion against God." 2. The Church must preach the positive doctrine that the existence of different races is full of possibilities for the enrichment of human life and in particular must demonstrate the true community of people of all races within its own life. 3. The Church must re-establish intimate contact with the common life of men, by participation of Christians in national and local government, in social life, and in concern for the outcast, the underprivileged and the persecuted.

In the report on Church and State, it was construed to be the duty *of* the Church "to criticize the State so far as it departs from the standards of justice set forth in the Word of God, which may even involve the duty of disobedience to the State's command." It also has "the responsibility of praying for the State, its people and its government; that of loyalty and obedience to the State, disobedience becoming a duty only if obedience would be clearly contrary to the command of God; that of co-operation with the State in promoting the welfare of the citizens, and of lending moral support to the State when it upholds the standards of justice set forth in the Word of God; that of holding before men in all their legislation and administration those principles which make for the upholding of the dignity of man who is made in the image of God; and that of permeating the public life with the spirit of Christ and of training men and women who as Christians can contribute to that end."

Shortcomings of the economic order were listed as follows: 1. Obstacles to Christian fellowship by the existence of classes on an economic basis; 2. Inequalities of opportunity in education, health, leisure, and environment, often aggravated by race discrimination; 3. Irresponsible power possessed by individuals; 4. Material possessions made the criterion of success; 5. Denial of the Christian's call to do the will of God in his daily work implied in enforced unemployment and in some actual forms of development; 6. Powerlessness of the investor and the consumer to control the results of their economic behavior; and 7. The threat of war involved in the economic rivalry of competing nations.

Movements of an anti-religious character were considered a challenge to the Church to examine them "in a spirit of honesty and unflinching criticism."

Among those who assisted in the formulating of these decisions were noted economists, including Sir Josiah Stamp of Great Britain and the Minister of Labor of Holland, Dr. Slotemaker de Bruine; Dr. John P. R. Maud of University College, Oxford; Father Sergius Boulgakoff, former member of the faculty of the University of Moscow, exiled in Paris; and from the United States, Charles P. Taft, 2nd., James M. Speers and Harry B. Earheart.

On the subject of education it was felt the Church should protest attempts of governments to control all agencies which educate or influence belief and behavior, or to try to curtail the Church in its right to teach Christian principles to her followers. The need of religious education was emphasized as a necessary substitute for any type that tends to overemphasize individualism or stimulate selfish nationalism. Divisions within the Christian Church were deplored as obstacles to unity in educational methods because of the consequent hesitancy of the State to "involve public education in sectarian strife" and so the State quite

naturally follows secular educational methods.

On War, the interest was reported by Henry Smith Leiper, executive secretary of the American Section of the Universal Christian Council, as "unprecedented." He said the Council's report "was frank in its admission of different and at present incompatible views among Christians concerning war," yet "it left these differences unresolved." The Council agreed on what Dr. Leiper in a review of the Council's "Highlights" said was "exceedingly significant."

The approved declaration stated: "Wars, the occasions of war, and all situations which conceal the fact of conflict under the guise of outward peace, are incidents in a world to which the Church is charged to proclaim the gospel of redemption. War involves compulsory enmity, diabolical outrage against human personality, and a wanton distortion of truth. War is a particular demonstration of the power of sin in this world and a defiance of the righteousness of God as revealed in Jesus Christ and Him crucified. No justification of war must be allowed to conceal or minimize this fact."

Three additional views on war were also set forth: 1. War is always sin and the Church will become a creative, regenerative, and reconciling instrument for the healing of the nations only as it renounces war absolutely; 2. Christians should participate only in such wars as are justifiable on the basis of international law, or wars waged to vindicate what they believe to be an essential Christian principle, to defend victims of wanton aggression, or to secure freedom of the oppressed; 3. Christians have a duty to obey the political authority as far as possible in its efforts to maintain its existence against aggression. They believe that the State is the agent divinely appointed to preserve a nation. Normally therefore a Christian must take up arms for his country, the only exception being when he is absolutely certain that his country is fighting for a wrong cause.

Further the statement said: "We do not affirm that any one of these positions can be held to represent the only possible Christian attitude. The Church must insist that the perplexity itself is a sign of the sin in which its members are implicated. It cannot rest in permanent acquiescence in the continuance of these differences."

The League of Nations was endorsed as "the most considerable effort yet made in the world's history to enable governments to consult, plan and act together," but voiced its recognition of the League's weaknesses and failures.

The work of the council at its Oxford conference was divided into sections. The Chairmen were: Church and Community, Sir Walter Moberly; Economics, Dean Maud of University College, Oxford; State, Dr. Max Huber, Holland; World of Nations, with subsection on War, Dr. John A. Mackay and Henry Sloane Coffin, United States.

THE ISSUES AT EDINBURGH

The Archbishop of York, William Temple, chairman of the conference on faith and order, told of the first such meeting held in 1927 as being concerned with an exchange of views held by denominations and an attempt to understand differences. It was now time, he said, to learn from one another and meet as "fellow-pupils." Dr. Leiper spoke on the disintegration of society as a summons to set up a united Church. He said a divided Church was unable to offer more than "a caricature of the Gospel."

Dr. Douglass gave a review of progress toward union in the intervening decade, during which the Anglican Communion established intercommunion with the Old Catholic Churches and had been carrying on similar negotiations with Churches in Finland, Latvia and Esthonia. The Scottish Presbyterians reunited in 1929 and the English Methodists in 1932. The Church of Christ in China, organized in 1927, had brought together a large number of groups, including Baptists, Reformed, Methodists, and Congregationalists.

Under the chairmanship of Dr. M. E. Aubrey, an English Baptist, a re-

port was accepted unanimously on "The Church's Unity in Life and Worship." This set forth as three levels of "unity" (1) cooperative action, (2) inter-communion, (3) corporate union. Federation was held to be not the final goal but a "promising approach." Obstacles to union were not found in matters of faith, confession, worship or polity but in conceptions of the ministry and the sacraments. The Edinburgh conference agreed there were serious matters like "orders" and the sacraments on which for the time being differences would exist.

JOINT EFFORT IN THE UNITED STATES

The program outlined by the committee on the proposed World Council met with instant approval on the part of the American sections of the two movements represented at Oxford and Edinburgh and a committee on finances for promoting the plan was set up in the early fall. It was given a commission as a joint executive body under the chairmanship of Professor William Adams Brown for the life and work group and Dr. J. Ross Stevenson for the faith and order group. In addition to the ten delegates to be named from the United States to the May meeting in Holland in 1938, two were to be selected by the United Church of Canada.

FEDERAL COUNCIL OF CHURCHES

Religion and Health.—Dr. Howard Chandler Robbins of the General Theological Seminary, New York City, was made chairman of a new committee of the Council, organized to make a study of the relations between physicians and ministers and give emphasis to ways in which they might co-operate. A committee was named on religion and health and held its first meeting Nov. 1. It was planned to include representatives of both professions in its personnel. The field of investigation was to include the work of specialists in psychiatry as well.

Peace and Goodwill.—Churches of all denominations were urged in a message from the Federal Council to be read from pulpits on Armistice Sunday, Nov. 7, to draw attention to efforts being exerted throughout the world on behalf of justice, reconciliation and peace. The message relayed a statement prepared for world-wide circulation which embraced what the Oxford Conference had to say on the subject of international relations. The message said "the first obligation of the Church" is "to be in living fact the Church, a society with a unity so deep as to be indestructible by earthly divisions of race or nation or class"; also that "The Church should remind its members that the principle of the unconditional supremacy of the State or Nation, advanced either in time of peace or of war, is incompatible with the Church's faith in Jesus Christ as its only Lord, and is therefore unacceptable as the final norm of judgment or action. It is the Church's duty to serve the nation in which it is placed, but the greatest service which it can render is to remain steadfast and loyal to its Lord, and to test rigorously all claims of national interest by His Gospel."

The feeling was expressed that "to condemn war is not enough. Christians must do all in their power to promote among the nations justice and peaceful co-operation, and the means of peaceful adjustment of altering conditions." An outstanding point in the statement was that "while giving discriminating support to work for peace through the League of Nations and kindred organizations, the Church cannot leave the duty of peace-making to political agencies. The Church is itself called to a ministry of reconciliation in a world riven by fears, suspicions and grievances."

The Far East.—The Council's bulletin, *Information Service*, published Oct. 16, was devoted to a factual analysis of the issues in the Far Eastern conflict. It reviewed the historical background, the aims of Japan, the struggle of China, and America's relations with both countries. On Oct. 9 a letter was sent to President Roosevelt over the signa-

tures of Dr. Edgar De Witt Jones, Council President; Dr. Samuel McCrea Cavert, general secretary, and Dr. Mary E. Woolley, chairman of the Department of International Justice and Goodwill. This letter said (citing an address the President had made at Chicago in which he was outspoken on the necessity of maintaining international accord): "As officials of the Federal Council of the Churches of Christ in America we have received with enthusiasm your statement at Chicago that 'It is a matter of vital concern to the people of the United States that the sanctity of international treaties and the maintenance of international morality be restored.' We believe it to be the duty of the United States to co-operate with other nations in establishing the primacy of law and order in international relations. . . . In keeping with the official position of the Council we approve of the official position of the State Department in announcing the willingness of the United States to consult with the signatories of the Nine Power Treaty in the interest of peace in the Far East."

Two considerations were emphasized as making such action desirable, a legal obligation inherent in the treaty terms and a moral responsibility upon our nation to co-operate with other nations. The Council and the Committee of Reference and Counsel of the Foreign Missions Conference of North America in September jointly published a statement on the attitude of both groups toward the situation in the Far East as being that "the Church should lead in arousing public opinion to support the government in transforming a policy of irresponsible isolationism into one of active participation in the organizing of the political and economic forces of the world for the purpose of establishing justice and goodwill." The Council issued a supplementary statement stating "without equivocation the conviction that the action of Japan in invading China and bombing helpless non-combatants violates every principle of international justice and regard for human rights as well as those Christian principles by which we must all be judged."

Spain.—The Federal Council, through its Department of Justice and Goodwill, supported the American Friends Service Committee through the year in sending food, clothing and medical supplies as a non-partisan commission to children who had been made orphans on both the Loyalist and the Rebel sides in the Spanish civil war.

HOME MISSIONS

More than 200 delegates from 30 denominational home mission boards met at the twenty-ninth annual session of the Home Missions Council in Asbury Park, N.J., Jan. 10–14, 1937, which was held jointly with the Council of Women for Home Missions. Their committees sustained a close relationship and the centre of their interest for discussion at this session was the city church. The closing papers were on "The Interdenominational Approach" by Rev. Ross W. Sanderson, executive secretary, Baltimore Federation of Churches; the Rev. Dr. Frederick B. Newell, executive secretary of the New York City Society of the Methodist Episcopal Church; and the Rev. Paul D. Eddy of the International Council of Religious Education.

FOREIGN MISSIONS

The Foreign Missions Conference of North America held its annual meeting Jan. 6–8, 1937, at Asbury Park, N.J. and took up a study of progress in rural missions abroad and of methods of appealing to young men and women to make foreign missions their life work. The Conference, since its meeting in Jerusalem in 1928, had been carrying on extended researches and activities prompted by them in helping Christian converts solve their economic problems on farms and in communities. The speakers were Dr. John H. Reisner, executive secretary of the Agricultural Missions Foundation, who described the rural work of colonial governments in Africa whence he had just returned; Dr. John L. Goheen, of the Presbyterian Church in Western India, who de-

scribed mission work in villages of that country; and Rev. Hugh Wells Hubbard, of Paotingfu, China, who told of activities under the auspices of the National Christian Council of China.

The reactions of young people to foreign missions and their criticisms of the Christian Church were described by Lyman Hoover of the Y.M.C.A. in China and Mrs. Leslie E. Swain. The former spoke of college and university students and the latter of graduates. The two groups had expressed similar convictions, it was reported, *i.e.,* while they looked forward to high ideals they felt the Church was powerless to make possible the realization of its own prophecies. The language of the Church was regarded by many as without meaning and the Church, moreover, was putting too much emphasis on talking about, rather than working for, the coming of the Kingdom of God.

WILLIAMSTOWN CONFERENCE OF JEWS AND CHRISTIANS

Protestants, Roman Catholics and Jews from 30 States attended meetings, Aug. 29 to Sept. 3, at Williams College to discuss how the press, radio, motion pictures and other means of influencing public opinion might be used to promote healthy relationships among all citizens and how their uses on the side of undemocratic forces might be checked. President Roosevelt wrote leaders at the Institute that "The whole structure of democracy rests upon public opinion" and "Ours is the duty to see that these agencies, through adherence to the highest ideals of truth, justice and fair play, are maintained as public agencies for the creation of wholesome relationships among the various cultural, religious, racial and economic interest groups which make up the American people."

Dr. Harry A. Garfield, president emeritus of Williams College, opening the Institute as chairman of a committee of sponsors, said: "We are here to exchange ideas, not to battle over programs of action. We are here to understand as far as possible the motives that actuate the lives of our fellows born and bred under other allegiances but living in a world which demands co-operation, and that means a spirit of neighborliness not heretofore present among us." The keynote address was by Professor T. V. Smith of the University of Chicago who defined democracy as "not a dogma, nor even a doctrine, but simply a doing."

The sessions were conducted by Dr. Garfield and his co-chairmen, Professor Carlton J. H. Hayes, Roger W. Straus and Harper D. Sibley. About 750 persons were present. Among the topics of leading interest was "Democracy in the Conciliation of Labor Disputes." The speakers were Stanley W. Root, director of the Regional Relations Board, and Father J. W. R. Maguire of St. Viator College. Round tables were held each noon with discussions on the religious press, inter-cultural education in schools, women organizations, the college campus, religious education and adult education.

BROTHERHOOD DAY

The fourth annual observance of Brotherhood Day was held on Saturday and Sunday Feb. 20–21, 1937 with endorsements by the mayors of cities and the governors of 34 States. The entire country was divided into seven areas so that many smaller communities were reached than before and a wider range of interest was reported. To expand interest in the subject of human relations carried on throughout the year by the National Conference of Jews and Christians, a conference for women was held at the Hotel McAlpin, New York, on Feb. 26, attended by 546 women from 273 organizations. The speakers were Mrs. Herbert H. Lehman, wife of the Governor of New York State; Mrs. Harper D. Sibley, wife of the president of the United States Chamber of Commerce, and Mrs. Edward C. Dailly, wife of a New York City attorney.

EMERGENCY PEACE CAMPAIGN

A No-Foreign-War Crusade was started under the chairmanship of

Harry Emerson Fosdick on April 6, 1937, the twentieth anniversary of the entry of the United States into the World War. The movement was started with a radio broadcast over the Blue Network of the National Broadcasting Company with Dr. Fosdick, Admiral Richard E. Byrd, and Mrs. Franklin D. Roosevelt as speakers. Speakers in the crusade were Dr. Edgar DeWitt Jones of Detroit, president of the Federal Council of Churches; Dr. Ivan Lee Holt, of St. Louis, and Dr. Albert W. Beaven, president of the Colgate-Rochester Divinity School, both of whom were formerly presidents of the Council.

WORLD ALLIANCE

Six principles to promote national consciousness of an obligation to "seek justice rather than fight for privilege" were formulated at the twenty-second annual meeting of the World Alliance for International Friendship Through the Churches which was held in Boston Nov. 7–11. These were circulated together with the statement of a program to carry them out, consisting of 11 points based on a conclusion that "the best machinery will fail unless infused with the spirit of goodwill."

The statement of principles was introduced with an expressed conviction that "wise political and economic agreements between nations demand a national conscience that will seek justice." If religious groups refuse such a task, the resolution said, it would be indicative of disloyalty. The principles were: "1. The members of every church should become intelligent as to the relations of the United States to other nations, the conditions under which peace is threatened, and the various efforts now being made to prevent war. 2. Churches should teach that war is a denial of our faith in a God of love and justice; 3. Moral principles must be applied to the economic and racial factors of international relations; 4. Church members should be helped to see the moral dangers involved in international enmities; 5. The motive of American neutrality should not be selfish isolation but a conservation of resources to serve a suffering world; 6. Churches, as well as individuals, should actively support intelligent legislation and cooperative efforts to prevent war."

The proposals made in the program were prefaced with the recording of a "deep satisfaction with a statement by President Roosevelt in an address in Chicago on Oct. 5, "that there can be no stability either within nations or between nations except under laws and moral standards adhered to by all," and with a later statement by Secretary of State Hull, applying this principle to the Far East. The Alliance shared "the well-nigh universal condemnation of the military and naval authorities of Japan in their aggression in China." Our Government was urged to follow "this cooperative effort to stop aggression with a pledge to the Japanese people that their just interests will be given careful consideration in the event that they agree to take part in an international conference." A message on the Chinese-Japanese conflict by the Catholic Association for International Peace was received with favor and concurred in (see "The Roman Catholic Church," pp. 621–633) along with a message of similar import by the Executive Committee of the Federal Council of Churches made jointly with the Committee of Reference and Counsel of the Foreign Missions Conference of North America.

The Alliance report expressed a conviction favoring amendment of the neutrality law to provide, in case of treaty violation, power for the President to lift an embargo from a nation agreeing to accept peaceful settlement and to apply it only against an aggressor. Continued co-operation was urged with the International Labor Organization and the League of Nations. Renewed pronouncements were made in behalf of racial justice, civil and religious liberty, economic justice and against military training in schools and colleges.

In January, 1937 the World Alliance announced plans in co-operation with the Federal Council, denominational peace commissions, and the Church Peace Union to set up peace committees in every church. The decision

to do this was reached at a semi-annual meeting of the Alliance in Atlantic City, in June, 1936. As "an adequate program" for each church committee, the Alliance announced in February, 1937 the six principles adopted in Boston in November. At the latter meeting round table discussions were conducted. At a dinner in connection with the Boston meeting, Mme. Malaterre-Sellier, only woman in the French delegation to the League of Nations, brought greetings from the Cardinal Archbishop of Paris and the Prime Minister and the Ministers of Air and of Foreign Affairs of France.

WORLD SUNDAY SCHOOL ASSOCIATION

Under the leadership of the peace education committee of this association, Sunday, Nov. 7 was observed throughout the world as Children's Peace Sunday.

FREE CHRISTIANS

The twelfth International Congress of Free Christians and Other Religious Liberals was held Aug. 3–8 in Oxford, England. Chief among its groups are Unitarians and Universalists. There were about 20 countries represented by delegates from independent Protestant bodies. The sixth international conference of the youth section, known as the Leyden International Bureau, also met in Oxford July 29 to Aug. 2.

THE CHURCH AND CO-OPERATIVES

The Rev. Dr. J. Henry Carpenter, executive secretary of the Brooklyn Church and Mission Federation, was named in the fall as chairman of a committee on The Church and Co-operatives of the Federal Council of Churches. This committee sent out in December an appeal to co-operatives and churches to contribute to a Christmas fund for Toyohiko Kagawa, Japanese Christian Labor leader, organizer of co-operatives and head of the Kingdom of God Movement in Japan, announcing word had been received from his friends there that his income from book royalties had been nearly cut off because of reduced sales laid to the rise of the war spirit. The fund was cabled for Christmas. Kagawa, when he visited the United States and Canada in 1936 on a six months tour, had written 106 books, the royalties from which he devoted largely to helping the poor, retaining about $40 a month for the needs of his own family.

Dr. Carpenter conducted in August a tour of co-operatives in Nova Scotia, developed the past five years by the extension department of St. Francis Xavier University. He had 90 companions from the United States and Canada, among whom were four Roman Catholic priests. They found farmers, miners and fishermen being led by priests, nuns and ministers in study classes in the co-operative philosophy. The tour, which was conducted on a co-operative plan, netted savings of $400, which ordinarily would have been returned as rebates to the tourists. They, however, waived refunds and voted to give $100 to help establish a travelling library in Nova Scotia and the balance of $300 to the Cooperative League of the United States to promote a second tour in the Summer of 1938.

THE ROMAN CATHOLIC CHURCH

By Charles A. McMahon

Editor, *Catholic Action*

INTRODUCTION

The year 1937 was replete with events of extraordinary interest and importance to the Catholic body throughout the world and especially in the United States. Outside purely religious ministry and mission, the spokesmen of the Church led a nation-wide offensive against the threat of Communism in response to the call of Pope Pius XI, as set forth in his condemnation of this subversive movement in his Encyclical on "Atheistic Communism," issued in March 1937.

Another major concern which received the attention of the Church was the organization for the promotion of the wider understanding and acceptance of Catholic principles of social justice as set forth especially in the Encyclicals "On the Condition of Labor" of Pope Leo XIII and "Reconstructing the Social Order" of Pope Pius XI. Problems brought about by the business recession made the time especially appropriate for the study of the economic problem from the viewpoint of Catholic teaching. As a result, there were written many bishops' pastorals on the general subject following which definite steps were taken in many dioceses to organize Social Action Schools for the Clergy, regional meetings to discuss the various remedies proposed by employers and employees, lectures, study clubs, etc.

Other problems which received special consideration were the extension of the Catholic Press, the Youth Movement, intensification of the Legion of Decency's efforts for clean films and entertainment and the launching of a similar movement seeking the elimination of the indecencies in magazine literature and the promotion of a nationwide movement for clean and inoffensive literature. The rural problem, the religious vacation school movement, a crusade for a more wholesome family life, use of the radio, the Catholic evidence movement, international peace, care of the immigrant, the civic education of non-citizens, adult education through study clubs and discussion groups, spiritual retreats for the laity, dramatics, recreation, etc., were among other matters whose interests were served mainly through the various departments and bureaus of the National Catholic Welfare Conference, the official agency of the Archbishops and Bishops of the United States for the promotion of unity in Catholic work.

Other outstanding events in the life of the Catholic Church in the United States in 1937 were the creation of three new ecclesiastical provinces; the inauguration at Las Vegas, N.M. of a seminary for the training of priests for Mexico; the highly successful International Eucharistic Congress held in the Commonwealth of the Philippines with Cardinal Dougherty, Archbishop of Philadelphia, as Papal Legate, and the cogent statements of the American Hierarchy on a number of important questions.

The number of ecclesiastical provinces was increased to 19 in 1937 through the creation of the Archdioceses of Detroit, Newark and Louisville. The number of dioceses was raised to 92, including the Ukrainian Greek Catholic Diocese and the Diocese of Pittsburgh (Greek Rite), beside the two vicariates apostolic of Alaska and Hawaii. Four new Sees were erected in 1937—Lansing, Mich; Paterson and Camden, N.J., and Owensboro, Ky.

Outside the United States, there were events of great joy counterbalanced by sorrow of persecution and warfare. The remarkable recovery of the Pope from his grave illness and the worldwide felicitations that marked his 80th birthday, the successful Eucharistic Congress in Manila, the success of Catholic missions in

many lands and the improved economic status which came to the peoples of many countries were all sources of rejoicing.

To a large extent these favorable developments were counterbalanced by the persecution of the Church in Spain, Germany, Mexico and Russia which moved the Pope to issue during the year three important Encyclical Letters—*Divini Redemptoris* (On "Atheistic Communism"), dealing with the evils of Atheistic Communism; the Encyclical of Passion Sunday, March 19, dealing with the condition of the Church in Germany; and the Encyclical of Sept. 29, 1937 dealing with the "Recitation of the Rosary" to combat modern world evils. In addition, the Holy Father issued on Easter Sunday an "Apostolic Letter to the Mexican Hierarchy," stating that his heart was greatly saddened by the conditions that afflict the Church in Mexico and expressing his consolation in the affection shown him by the Hierarchy and clergy of that country.

CATHOLIC POPULATION IN THE UNITED STATES

The Catholic population of the United States, including Alaska and the Hawaiian Islands, was placed at 20,959,134 in the *Official Catholic Directory*. This represented an increase of 223,945 over the figure for 1936. The total number of priests was given as 31,649, an increase of 541, while the number of churches was 18,526, an increase of 139. The total of 62,062 converts was a slight decrease from the total of 63,454 given in 1936.

NATIONAL CATHOLIC WELFARE CONFERENCE

The "deep satisfaction" of Pope Pius XI with the "steady and solid progress which is being made by the forces of Catholic Action in the United States of America under the zealous and enlightened guidance of the Hierarchy," was expressed by Eugenio Cardinal Pacelli, Papal Secretary of State. Speaking with reference to the minutes of the Eighteenth Annual Meeting of the National Catholic Welfare Conference and the annual reports of its several departments and bureaus, Cardinal Pacelli said His Holiness was "much pleased" to examine these papers.

Pope Pius XI also praised the N.C.W.C. for the issuance of a series of four pamphlets exposing the evils of Communism, and expressed his thanks for a specially bound booklet on the Conference, and for the filial devotion and good wishes expressed by the N.C.W.C. staff on the fifteenth anniversary of his coronation.

At the annual meeting of the National Catholic Welfare Conference in Washington in November, and subsequently through its Administrative Board, the Bishops of the United States declared to all people that Pope Pius XI is "the truest friend of the poor and the laboring man in the world today," denounced social injustice and presented a vigorous statement entitled "A Christian Attitude on Social Problems"; condemned promiscuous and unwise use of intoxicants, immoral movies and unclean floor shows; voiced poignant sorrow over the bitter persecution of the Church in Spain and extended their sympathy to the Spanish Hierarchy, whose Pastoral Letter they warmly praised; denounced the "satanic resourcefulness" and "incredible excesses" of the leaders of modern paganism in Germany, and told the Bishops of Germany that "the Church of America, the Catholic world, and all who believe are with them (the faithful) and with you." The general meeting of the Bishops also expressed to the Holy See the desire of the Bishops, priests and people of the United States to see Catherine Tekakwitha, "The Lily of the Mohawks," honored with canonization.

The cause for the beatification of Mother Francis Xavier Cabrini, Foundress of the Missionaries of the Sacred Heart, who died in Chicago Dec. 22, 1917, advanced a step in November when the decree approving the heroism of her virtues was read in the presence of Pope Pius XI.

At the direction of the Administrative Board, the Rt. Rev. Msgr. Michael J. Ready, general secretary of the N.C.W.C., appeared before the House of Representatives Committee on Education March 31 in opposition to the Harrison-Black-Fletcher Bill as then written. "We are in favor of every reasonable proposal tending to the improvement of public schools in our country," Monsignor Ready said. But, he added, "the measure under consideration, providing for the expenditure of up to $300,000,000 a year, would not bring the benefits proposed." The Rev. Dr. George Johnson, director of the N.C.W.C. Department of Education and secretary general of the National Catholic Educational Association, appeared before the Committee in opposition to the bill on April 8.

The Legal Department of the N.C.W.C. delivered to the committees on insular affairs in both the Senate and the House, last June, a memorandum strongly urging that the birth control legislation recently enacted in Puerto Rico be annulled by Congress. The matter is still before the two Congressional committees.

A supplementary report of the N.C.W.C. Department of Social Action, made public in December, described the extent and activities of Communism in the United States, and urged the inauguration in each diocese of a program of Catholic social teachings designed to guide economic and social reforms along the lines of the Papal Encyclicals and to keep them from Communist hands.

The N.C.W.C. Rural Life Bureau gave much attention to the promotion of motor missions in rural areas, emphasized the opportunities available under recent farm tenant legislation, sponsored three regional institutes for diocesan Rural Life Bureau directors, and published the first Diocesan Directors' Series on Rural Catholic Action.

The Catholic Conference on Industrial Problems held highly successful regional meetings at Des Moines, Fresno, Denver, Rochester, Davenport, Indianapolis and Hartford.

The Catholic Association for International Peace published seven committee reports and had representatives at three international peace congresses in Europe. It announced the organization of International Peace Clubs in 87 Catholic universities and colleges, held its annual meeting and also an annual meeting of its Student Peace Federation. It held nine regional meetings of the Federation in various parts of the country.

March saw the announcement that the N.C.W.C. had adopted a program for aiding Catholic youth work in the various dioceses, and that the program embodied the establishment of a National Catholic Youth Bureau at the Conference headquarters. The summer saw the inauguration, under the general supervision of the N.C.W.C. Department of Social Action, of Summer Schools of Social Action for the Clergy. Schools were held in the Archdioceses of Milwaukee, San Francisco and Los Angeles and the Diocese of Toledo.

In August, after a conference with the State Department, the N.C.W.C. agreed to act as a clearing house in handling inquiries concerning the situation of Catholic religious from this country working in the disturbed areas of China.

The Administrative Board, N.C.-W.C., elected by the annual general meeting of the Bishops, organized as follows: the Most Rev. Edward Mooney, Archbishop of Detroit, chairman; the Most Rev. John B. Peterson, Bishop of Manchester, vice chairman of the Administrative Board and episcopal chairman of the Department of Education; the Most Rev. Edwin V. O'Hara, Bishop of Great Falls, secretary of the Administrative Board and episcopal chairman of the Department of Social Action; the Most Rev. Francis C. Kelley, Bishop of Oklahoma City and Tulsa, treasurer; the Most Rev. Samuel A. Stritch, Archbishop of Milwaukee, episcopal chairman of the Department of Catholic Action Study; the Most Rev. Joseph F. Rummel, Archbishop of New Orleans, episcopal chairman

of the Department of Lay Organizations; the Most Rev. Hugh C. Boyle, Bishop of Pittsburgh, episcopal chairman of the Legal Department; the Most Rev. John Mark Gannon, Bishop of Erie, episcopal chairman of the Press Department; the Most Rev. John J. Mitty, Archbishop of San Francisco; and the Most Rev. John Gregory Murray, Archbishop of St. Paul.

The Most Rev. John F. Noll, Bishop of Fort Wayne, who has served as the episcopal chairman of the Department of Lay Organizations, retired from the Board in November under a rule limiting the number of consecutive one-year terms a Bishop may serve. Bishop Boyle returned to the Administrative Board after retiring in November 1936 under the same rule.

Assistant Bishops to the N.C.W.C. Administrative Board, are as follows: Most Rev. Edward F. Hoban, Bishop of Rockford; Most Rev. Emmet M. Walsh, Bishop of Charleston; Most Rev. Karl J. Alter, Bishop of Toledo; Most Rev. John A. Duffy, Bishop of Buffalo; Most Rev. Francis P. Keough, Bishop of Providence.

EPISCOPAL CHANGES

An Archbishop and five Bishops were transferred to other Sees, two new Archbishops and seven new Bishops were named by Pope Pius XI, and four Bishops died in 1937. Three native American priests laboring in Eastern Asia were consecrated Bishops in the year. The Most Rev. Charles F. Buddy, who was consecrated first Bishop of San Diego in December, 1936, was installed in February.

The Diocese of Savannah became the Diocese of Savannah-Atlanta. The Most Rev. Edward Mooney was transferred from the Diocese of Rochester and became the first Archbishop of Detroit when the latter See was elevated to Archiepiscopal dignity. The Most Rev. James E. Kearney, Bishop of Salt Lake, was transferred to succeed Archbishop Mooney as Bishop of Rochester, the Most Rev. John A. Duffy, Bishop of Syracuse, became Bishop of Buffalo; the Most Rev. Joseph H. Albers, Auxiliary Bishop of Cincinnati, became the first Bishop of Lansing, Mich., when that See was created at the time of the establishment of the Archdiocese of Detroit; the Most Rev. William J. Hafey, Bishop of Raleigh, became Coadjutor Bishop of Scranton; the Most Rev. Thomas H. McLaughlin, Auxiliary Bishop of Newark, was named first Bishop of Paterson, N.J.

The Most Rev. Thomas J. Walsh became the first Archbishop of Newark and the Most Rev. John A. Floersh became the first Archbishop of Louisville, when their respective Sees were created archdioceses in December.

The new Bishops created in 1937 are: The Most Rev. Paul C. Schulte, Bishop of Leavenworth; the Most Rev. Walter A. Foery, Bishop of Syracuse; the Most Rev. Duane G. Hunt, Bishop of Salt Lake; the Most Rev. Eugene J. McGuinness, Bishop of Raleigh; the Most Rev. Bartholomew J. Eustace, first Bishop of Camden, N.J.; the Most Rev. Francis R. Cotton, first Bishop of Owensboro, Ky.; and the Most Rev. George J. Rehring, Auxiliary Bishop of Cincinnati.

The Most Rev. Adolph John Paschang, M.M., was named Vicar Apostolic of Kongmoon, China; the Most Rev. Ambrose Pinger, O.F.M., Vicar Apostolic of Chowtsun, China; and the Most Rev. Julius Dillon, O.F.M., Apostolic of Shasi, China.

The Rt. Rev. Stephen Schappler, O.S.B., was solemnly blessed as Abbot of Conception Abbey, Conception, Mo.; the Rt. Rev. Leonard Schwinn, O.S.B., became Abbot of Holy Cross Abbey, Canon City, Colo.; and the Rt. Rev. Patrick O'Brien, O.S.B., was chosen Abbot of St. Mary's Abbey, Newark, N.J.

APOSTOLIC DELEGATE TO THE UNITED STATES

His Excellency, the Most Rev. Amleto Giovanni Cicognani, Apostolic Delegate to the United States, delivered several addresses and addressed messages to meetings of

Catholic organizations held at various points throughout the country.

Speaking at the Third National Cathechetical Congress in St. Louis, when he called the Confraternity of Christian Doctrine "a priceless contribution" to the school of Christ, His Excellency declared that the necessity for intensifying the teaching mission of the Church has never been felt "so urgently and impellingly as in our day." In a letter conveying the blessing of Pope Pius XI to a Regional Conference of Catholic Youth in Salt Lake City, the Apostolic Delegate said: "The Holy Father looks upon the young women and men who publicly do battle for what is good, as his specially beloved helpers."

Speaking at celebrations marking the Centenary of the See of Dubuque, Archbishop Cicognani declared that history will record the decadence of those nations which have excluded God from their destiny and will reproach those who have violated consciences.

Speaking to the annual meeting of the Catholic Rural Life Conference in Richmond, His Excellency said the most elementary justice entitles rural people to standards of living "no less abundant and complete than those enjoyed by the urban population."

CATHOLIC SUPPORT OF MISSIONS

The United States reported the largest increase of any one country in contributions to missions, it was revealed at the meeting of the Supreme Council of the Pontifical Society for the Propagation of the Faith held at Rome. The total increase in contributions for the year was $105,000 for the world, and the increase for the United States was $35,000.

In the year from Oct. 1, 1936, to Sept. 30, 1937, the Catholic Church Extension Society distributed nearly $750,000 for various needs of the Home Missions. With the help of the Extension Society, mission chapels, costing from $3,000 to $5,000, were built, or other religious buildings provided, or repairs made, in 21 States, Puerto Rico and the Canal Zone.

More than 550 American citizens were shown to be laboring as missionaries in China in a survey made by the office of the General Secretary of the National Catholic Welfare Conference. They represented a dozen religious Orders and Congregations and a score of Sisterhoods. These American Catholic Religious figured in many of the stories that came out of strife-torn China telling of their heroic devotion to the poor and afflicted.

The Catholic Foreign Mission Society of America—Maryknoll—reported nearly 15,000 baptisms in China, Manchukuo, Japan and Korea in one year.

CATHOLIC CO-OPERATION IN CONSTITUTION ANNIVERSARY

Catholics throughout the United States joined wholeheartedly in the observance of the 150th anniversary of the signing of the Constitution of the United States. Cardinals, Archbishops, Bishops, priests and the laity took part in the various observances, and Catholic colleges, schools, lay organizations and institutions of various kinds conducted programs.

Seventy-five thousand persons thronged Philadelphia's Municipal Stadium, when Dennis Cardinal Dougherty, Archbishop of Philadelphia, celebrated a Solemn Pontifical Field Mass in thanksgiving for the protection God has given this nation under the Constitution. The Mass was celebrated at the invitation of Gov. George H. Earle of Pennsylvania.

Speaking at the annual meeting of the United States Catholic Historical Association, Patrick Cardinal Hayes, Archbishop of New York, lauded the Constitution as one of the noblest documents of its kind ever devised by man.

One of the most impressive celebrations was that held at Doughoregan Manor, Maryland, to commemorate the bicentennial of the birth of Charles Carroll of Carrollton, "the greatest Catholic layman," who was the last surviving signer of the Declaration of Independence. This

celebration at which the Most Rev. Michael J. Curley, Archbishop of Baltimore, officiated took on the double aspect of a commemoration also of the 150th anniversary of the signing of the Constitution.

OBSERVANCE OF IMPORTANT ANNIVERSARIES

The Archdiocese of Dubuque and the Dioceses of Natchez and Nashville observed their centenaries. The Diocese of Lincoln observed its fiftieth anniversary, as did the Diocese of Wichita, while the Diocese of Grand Island observed the twenty-fifth anniversary of its establishment. The Christ Child Society completed 50 years of excellent work.

June 1, by proclamation of President Roosevelt, was set aside for the national commemoration of the 300th anniversary of the birth of Père Jacques Marquette. The 150th anniversary of the historic Shrine of the Sacred Heart of Conewago, Pa., was observed. The Most Rev. James A. Griffin, Bishop of Springfield in Illinois, was celebrant of a Solemn Pontifical Mass in the new Armory at Springfield, Ill., to climax that city's joint centennial as the capital of Illinois and as the home of Abraham Lincoln.

Every archdiocese and diocese in the United States held some special commemoration of Pope Pius XI's eightieth birthday on May 31. Archbishop Cicognani took the lead in a radio broadcast which carried his voice to every section of the country. Introduced on the air by Monsignor Ready, N.C.W.C. General Secretary, Archbishop Cicognani prayed: "May the Holy Father, Pope Pius XI, the glory of our century, continue for a long time his work of love and peace."

The twenty-seventh annual convention of the Catholic Press Association of the United States, held at Rochester was dedicated to "Our Holy Father, Pius XI, Pope of the Catholic Press." Many secular newspapers joined with Catholic publications in paying tribute to His Holiness.

EDUCATION

The new Statutes of the Catholic University of America were approved by the Sacred Congregation of Seminaries and Universities in September. In November, Pope Pius issued an Apostolic Letter urging that in the next two years before the University's golden jubilee, the Archbishops and Bishops "give to the claims of this institution priority over all appeals other than those of established tradition and of strict necessity." With the fall term, the Sulpician Seminary in Washington became the Catholic University Seminary for the training of diocesan priests, and a new School of Social Sciences was inaugurated.

The National Catholic Educational Association, holding its 34th annual meeting at Louisville, applauded the Holy Father's defense of the Catholic schools of Germany, condemned the Reich Government's attack upon those institutions, and asserted that the same situation is bound to arise anywhere else where sight is lost of the fact that human beings have certain inalienable rights. The Association opposed the Harrison-Black-Fletcher education bill, declaring it promises "only a deeper entrenchment of the inefficiency and abuses now existing."

The Very Rev. Dr. Edward V. Stanford, O.S.A., president of Villanova College, was elected chairman of the National Conference of Church-Related Colleges. Mrs. William J. B. Macaulay (the former Mrs. Nicholas F. Brady) gave her Long Island estate "Inisfada" to the Maryland—New York Province of the Society of Jesus, which made it into a house of studies. Control of Mercy Hospital, Chicago, was assumed by Loyola University in that city.

September 1937 saw the reopening of 10,347 Catholic schools in the United States with a registration of 2,100,000 elementary pupils, 290,000 high school students, 100,000 college students, 3,600 normal school students and 16,900 seminarians. The number of students attending summer school sessions at colleges and normal schools was 40,611, bringing the total 1937–38

registration to 2,551,100 students. More than 89,000 teachers, mostly religious, were employed in conducting the Catholic school system in the United States, estimated as saving the nation $140,000,000 a year exclusive of capital outlay and interest.

LEGISLATION

Legislation enacted in Rhode Island, New Hampshire and Kansas provided free bus transportation to children attending parochial schools as well as tax-supported public schools, and in three instances in New York, in decisions of the courts and in a ruling by the State Commissioner of Education, this right, already legislated, was upheld.

The Montana Legislature defeated bills providing free textbooks and free bus transportation to pupils of Catholic as well as tax-supported public schools. Measures before the Ohio Legislature which would have given aid to the parochial schools of that State again were unsuccessful. A letter addressed to all Protestant ministers of Ohio on stationery of "The Ohio Council of Churches," urged them to unite their people in opposition to the bills providing aid to Catholic schools.

Religious tests for teachers and others seeking public employment were forbidden by an act passed by the Washington State Legislature. The Supreme Court of Iowa, following a decision in North Dakota, held that Catholic Sisters retained by a school district to teach in a public school should be permitted to wear their religious habits in the classroom.

Declaring that "the National Catholic Welfare Conference has a deep interest in every legislative proposal, the purpose of which is to extend protection to family, life and the child," William F. Montavon, director of the Legal Department, N.C.W.C., appeared before the Senate Committee on Interstate Commerce in May to urge that the good in two measures then before Congress be combined and thus "give the country sound legislation regulating child labor." To remove the blot of child labor and "prevent that exploitation is the duty of legislative bodies in several States and in the Union, each within the limitations of its own jurisdiction," he said. The provisions of these bills, both those indorsed and those opposed, were still before Congress in the extraordinary session in two versions of fair labor standards legislation.

VIEWS OF CATHOLIC WOMEN

The National Council of Catholic Women, at its 17th annual convention, extended sympathy to the women of Spain as sisters and pledged "cooperation with every effort made to restore for the Spanish children in their own country the protection of a Christian home, of which they have been so ruthlessly robbed." The meeting also denounced as unworthy of Christian womanhood "any social order undermining the security of the family," and condemned as "pernicious, injurious to health of body and destructive to peace of conscience, degrading to the purity of womankind, and unworthy of Christian women" the "pseudo-scientific principles offered to women to defy the God-given right of co-creatorship and set at naught His choicest blessing." Miss Katherine R. Williams of Milwaukee was again elected president.

The N.C.C.W. organized new councils in the Dioceses of Nashville and Little Rock, conducted reorganization work in the Archdiocese of St. Paul and the Diocese of Pittsburgh, and extended the work of the Council throughout the Diocese of Harrisburg.

The N.C.C.W. inaugurated a highly successful series of national radio broadcast on "Youth" extending over 10 weeks and conducted by Miss Anne Sarachon Hooley, chairman of its National Youth Committee.

LABOR PROBLEMS

Labor problems were a principal concern of the nation in 1937 and Catholics were prominent in their efforts to bring about an equitable and lasting solution. The Most Rev. John T. McNicholas, O.P., Archbishop of Cincinnati, appealed to labor leaders to establish peace within

their own ranks, warning that disunion may cause workers to lose many of the advantages they have won. The Most Rev. Gerald Shaughnessy, S.M., Bishop of Seattle, emphasized that the Church's conditions for the justification of industrial strikes are very specific, but said that in cases where the conditions are fulfilled, a "sit-down" strike is not among the things to be immediately condemned. The U. S. Supreme Court decision affirming the constitutionality of the Wagner Labor Relations Act brought to mind the strong position in favor of collective bargaining taken by the N.C.W.C. Administrative Board in a letter to the Senate Committee on Education and Labor in 1934. Archbishop Mooney declared that no authority of the Catholic Church had ever asserted that the C.I.O. is incompatible with Catholicity on the basis of its publicly stated principles.

Speaking over the radio in support of the United States Government's Unemployment Census, Monsignor Ready said the census was an undertaking in which the interests of the Church and the interests of the State "are so intimately connected that they cannot be separated" and declared that priests, "dedicated to the welfare of our country," were eager to co-operate in its taking.

THE POPE

The indefatigable labors of Pope Pius XI, always a source of wonder to the world, were even more remarkable during 1937, the early part of which saw him recovering from his serious and painful illness. In 1937, as always, the Holy Father insisted on spending himself unselfishly in the service of God and of the Church.

Papal audiences, suspended for a while, were eagerly resumed by the Holy Father at the earliest moment his health permitted. On frequent occasions he received more than 1,500 persons at one time. He continued his special interest in receiving newly-married couples, according them the audience he granted during the time of his spiritual retreat, and seizing upon every opportunity to impress upon them their responsibility and opportunity.

The Catholic world, which prayed so earnestly for the Holy Father's recovery, was rewarded with two occasions for celebration. One was the Sovereign Pontiff's recovery, and the other was his observance of his eightieth birthday. Both developments brought innumerable expressions of thanksgiving and well wishes pouring into the Vatican. Pope Pius stood and walked on Feb. 14 for the first time since his illness began two months before. On April 1, he resumed his place at his desk in his official apartment, after an absence of exactly four months. His Holiness was already at Castelgandolfo for the summer months when he observed his eightieth birthday on May 31.

The formal inauguration of the Pontifical Academy of Sciences took place on June 1. Upon the advice of his physician, to conserve his strength, Pope Pius decided to forego a radio address he was to have delivered on this occasion. His Holiness left the confines of Vatican City on Nov. 4 to inaugurate the new Lateran Athenaeum.

Pope Pius did employ the radio this year, however, to speak to his spiritual children in various parts of the world. Notable occasions were his broadcast of a message on Feb. 7 to the Thirty-third International Eucharistic Congress, held at Manila, and another to the Lisieux celebrations on July 11.

SACRED COLLEGE

There were six vacancies in the Sacred College at one time during 1937, but the elevation of five new Cardinals in December brought the total number up to 69, or one short of the full complement. The newly-created Cardinals are Giuseppe Cardinal Pizzardo, who was Secretary for Extraordinary Ecclesiastical Affairs; Ermenegildo Cardinal Pellegrinetti, who was Papal Nuncio to Jugoslavia; Arthur Cardinal Hinsley, Archbishop of Westminster; Pierre Cardinal Gerlier, Archbishop of Lyons, and Adeodato Giovanni Piazza, Patriarch of Venice. The members

of the Sacred College who died in 1937 were Eustacio Cardinal Ilundain y Esteban, Archbishop of Seville, who died Aug. 10, and Cajetan Cardinal Bisleti, Prefect of the Sacred Congregation of Seminaries and Universities, who died Aug. 30. Eugene Cardinal Tisserant, who was a simple priest at the time he was elevated to the Sacred College in 1936, was consecreated a Bishop on July 25.

SACRED ROMAN ROTA

The report of the Sacred Roman Rota, made public in May, again demonstrated the zeal and watchfulness with which the Church guards the sanctity of matrimonial ties. Out of 78 decisions rendered by the Rota with reference to marriage matters, only 34 were favorable to applicants for a decree of nullity. Too, those who are wont to say that only the rich can find the way open to a decree of nullity were dealt crushing refutation by the fact that of the 34 decrees granted, 21 were awarded to persons so poor that they were unable to pay the ordinary expenses of such juridical procedure.

SINO-JAPANESE RELATIONS

In October the Holy See denied promptly, with vigor and in the most categorical terms, a false but widespread report that it had taken sides with Japan in the conflict in China. The report said the Vatican favored Japan as a means to combat Communism. The instructions which the Holy See has constantly given to missionaries—that they remain absolutely outside of and beyond any political activity—were reiterated. It was also denied that the Vatican had set up the Commission pro Deo, or that the Commission, however meritorious it may be, is directing the Catholic fight against Communism.

SPAIN

Conditions in Spain grew worse in 1937. In the late summer, a joint Pastoral of the Spanish Bishops, addressed to the Bishops of the world, made known that 20,000 churches had been destroyed or sacked; that 40 per cent of the clergy in the devastated areas had been killed, in some dioceses 80 per cent, and that 300,000 laymen had been killed solely for their religious beliefs. Messages of consolation and encouragement were sent the Spanish Bishops by the Hierarchies of countries throughout the world.

At the reading of the decree approving the miracles proposed in the cause for the canonization of Blessed Salvatore of Horta, a Spanish Friar Minor, Pope Pius prayed that this Spanish Blessed take his country under his protection so that it might soon be restored to peace and prosperity. In July, His Holiness told 20 refugee Sisters Hospitallers of the Sacred Heart, who had escaped from Madrid to Rome, that they must pray for Spain, which is not only poor in its present distress but also sick. However, the Holy Father added, the heroic fidelity to the Faith of their ancestors exhibited by such large numbers of Spanish Christians holds great promise not only for the present but also for the future.

Publishing documents to support its statements, *Osservatore Romano* disproved in June the charges of Spanish Reds that priests participated in the civil war, and exposed the extreme bad faith of the Catalonia Red Committee for Propaganda. A photograph which the Red Committee for Propaganda said showed "armed Religious" was proven by *Osservatore* to be a photograph taken during a play staged at a celebration in a religious college in Italy in 1935. The scene was supposed to represent the defense of a China mission against an attack by marauding bandits, and some of the seminarians were equipped with hunting rifles and toy cannon.

In an interview granted an N.C.W.C. representative in Spain this summer, His Eminence Isidro Cardinal Goma y Tomas, Archbishop of Toledo, said: "Say to the Catholics of the United States that in all my proceedings, in the tragic events that have drenched Spain with blood, I have done nothing other than to exercise my pastoral ministry without any sort of political preoccupation." His Eminence Pedro Cardinal Segura y

Saenz was named Archbishop of Seville to succeed the late Cardinal Ilundain y Esteban.

The paternal solicitude of Pope Pius XI for the Basque children was one of the most deeply impressive things in the year. The Holy Father, with a gift of 300,000 lire, made the first fund available for the assistance of the Basque children, and through a mission carried out in Spain by Archbishop Ildebrando Antoniutti, Apostolic Delegate to Albania, took the lead in the repatriation of those Basque children whom the Leftists had sent abroad for propaganda purposes. These activities brought to light the enormous pains which the Leftists went to to obstruct the reunion of these children with their parents in Spain. The family names of children sent to Russia by the Leftists were obliterated on the records, and they were given merely a number instead.

GERMANY

The increase and intensification of the attacks upon the Church in Germany, where the Catholics total 23,772,000 and constitute 33 per cent of the population, led one prelate—Bishop Sproll of Württemberg—to say towards the close of 1937: "We German Catholics have become Public Enemy Number 2." Implying that Communists are Public Enemy Number 1, the Bishop meant that Catholics are hated nearly as much as the Communists.

On the first Sunday of 1937, there was read from all German pulpits a joint Pastoral pledging Catholics' support to Chancellor Hitler's campaign to eradicate Communism, but emphasizing at the same time that "legal and actual freedom" is vital for the Church. Despite this, there was every indication by the middle of February that the Nazis were planning a crushing blow against the whole Catholic parochial school system, and Adolf Cardinal Bertram, Archbishop of Breslau, and Joseph Cardinal Schulte, Archbishop of Cologne, conferred with Chancellor Adolf Hitler concerning this situation.

In March, the situation had become such that Pope Pius XI, having exhausted all available diplomatic means to impress upon the German regime the paramount importance of its fulfilling the obligations of the Concordat, made public an Encyclical which in no uncertain terms accused the Nazi regime of flagrantly violating pledges. In May, when the dirigible *Hindenburg* was destroyed at Lakehurst, N.J., His Holiness sent a message of condolence to Chancellor Hitler.

Chancellor Hitler virtually killed all hope for the restoration of peace between Church and State with his May Day address in Berlin, and the Nazi regime went on jailing priests and laymen, replaced crucifixes in the schools with pictures of Hitler, seized the printing plants of Catholic publications, launched a campaign apparently intended to discredit the German Hierarchy with German Catholics, and affronted Catholics by naming Alfred Rosenberg, arch-foe of Christianity, to receive the 100,000-mark German National Prize for literature.

The Nazi press launched a boisterous outcry against George Cardinal Mundelein, Archbishop of Chicago, for his denunciation of Nazi persecution of the Church. No German newspaper was permitted to carry accounts of an audience subsequently granted a group of Chicago pilgrims, at which Pope Pius praised Cardinal Mundelein for his defense of things religious.

Despite this definite worsening of the position of the Church in Germany, and the fact that the Nazi Government took over the operation of 966 parochial schools in Bavaria in June, unprecedented fervor marked 1937's Corpus Christi processions, some 800,000 pilgrims visited Aix-la-Chapelle, Germany, for a traditional pilgrimage, and Archbishop Konrad Groeber of Freiburg was able to declare that the German people are firm in their Faith.

MEXICO

Though it was asked frequently in 1937: "Has religious persecution in Mexico ceased?" there was nothing to justify an affirmative answer. True,

the majority of prelates expelled from their dioceses returned to their respective Sees, many priests who were in hiding began to officiate publicly, churches in some sections—notably Vera Cruz and Sonora—which had been closed since 1931 were reopened, and the Supreme Court granted an injunction against the Chihuahua State Government, thus authorizing three priests to exercise their ministry.

But, on the other hand, not a single persecutory law was repealed, nor were any amended. The laws themselves, while enforced with some indulgence in the Capital and larger cities, are enforced with vigor in towns and small places.

February saw the selection of the Most Rev. Luis Martinez, Coadjutor Archbishop of Morelia, to be Archbishop of Mexico City. The Feast of the Immaculate Conception on Dec. 8 saw the consecration of the Most Rev. Miguel Dario Miranda as Bishop of Tulancingo. The consecration took place in the Basilica of Our Lady of Guadalupe in Mexico City, and the Most Rev. Leopoldo Ruiz y Flores, Archbishop of Morelia, who had just returned from his third exile, officiated. Only a few weeks before announcement was made in Mexico City that the Office of the Attorney General was discontinuing the actions it had pending against Archbishop Ruiz and the Most Rev. José Manrique y Zarate, Bishop of Huejutla, also an exile.

CANADA

At the very beginning of the year —January 6—death deprived Canada of one of its most famous figures and closed one of the most remarkable religious careers in modern times. Brother André, known to millions as the founder of St. Joseph's Oratory at Montreal, and frequently called "The Miracle Man of Montreal," died.

Five Bishops came out of the Northwest to plead the cause of the Indians before Canada's Parliament in Ottawa this fall. The first convention of the Confraternity of Christian Doctrine held in Canada—at Toronto at the end of January—was a pronounced success. An amendment to the Assessment Act of Toronto, which made it obligatory for corporations to direct taxes against separate schools in that Province, was set aside early in the year. His eminence Rodrigue Cardinal Villeneuve, Archbishop of Quebec, speaking at a banquet given in his honor at the centennial celebration of Sherbrooke, Que., said social peace through the co-ordination of families and classes is the aim of the Church.

ENGLAND

At the dawn of 1937 the Most Rev. Arthur Hinsley, Archbishop of Westminster, pledged in the name of the 17,000,000 Catholics of the British Empire their loyalty to their new King and Emperor George VI. The close of the year saw the distinguished prelate in Rome, where he was elevated to the Sacred College of Cardinals.

Giuseppe Cardinal Pizzardo, then Archbishop, headed a delegation which represented Pope Pius XI at the coronation of King George VI in May. The Papal delegation did not enter Westminster Abbey, but occupied special places in the loggia outside. The title "Defender of the Faith" was dropped from the coronation service. The British Home Office refused to submit to King George VI the address from the Catholic Hierarchy of England and Wales in which Catholic loyalty to the crown was affirmed on the occasion of the coronation. Home Secretary Sir John Simon gave as the reason that in the document the Archbishops and Bishops were referred to as "Catholic" and that in it "use is made of territorial designations which cannot be recognized in official communications." The highest order of knighthood—the Garter—was bestowed upon the Duke of Norfolk, Catholic peer who had charge of the coronation ceremonies.

IRELAND

Outstanding in the year for Ireland was the adoption of a new Constitution which, beginning with the words "In the Name of the Most Holy Trinity, from Whom is all authority,"

has many distinctively Catholic points. The Constitution became effective Dec. 29, when a special postage stamp, displaying the initial words of the document, was issued.

Grave concern over the menace of Communism was shown in the Lenten Pastorals of members of the Irish Hierarchy, and the spring saw a movement to form the "Catholic Union," to co-ordinate the Catholic forces in defense of Christianity. The meeting of the Irish Hierarchy in October adopted a reply to the Pastoral Letter of the Bishops of Spain, lauding the epistle of the Spanish Bishops, praising the courage of their people, and deploring the misleading reports in the press concerning causes of the strife in Spain.

FRANCE

A quarter of a million people were present at Lisieux, France, on Sunday, July 11, when Cardinal Pacelli, as the personal Legate of Pope Pius XI, dedicated the Basilica of St. Therese. Also present were four Cardinals, 15 Archbishops and 60 Bishops. In a letter on this occasion, which was also the time of the French National Eucharistic Congress, the Holy Father said he was sure that the Basilica will continue to promote the cause of peace.

The end of September saw the announcement that the Thirty-fifth International Eucharistic Congress is to be held at Nice, France, in 1940. Oct. 17 saw the solemn reopening of the world-famous Reims Cathedral, restored, but still bearing scars from the World War on its venerable walls. The restored Cathedral of Soissons was dedicated six days later. Religion was given an important place in the displays at the Paris International Exposition.

Pierre Cardinal Gerlier, Archbishop of Lyons, a collateral descendant of St. Catherine of Genoa and a former member of the Paris bar, was elevated to the Sacred College in December. The Most Rev. George François Xavier Marie Grente, Bishop of Le Mans, was received into the Academie Française. The remains of Marshal Foch, Catholic Generalissimo of the Allied forces in the World War, were removed to a sarcophagus near the tomb of Napoleon, under the dome of the Invalides. Charles Marie Widor, perpetual secretary of the Academy of Fine Arts and master organist, died at the age of 93. Marius Gonin, a former weaver who founded the Semaines Sociales, died in the late summer.

February saw Alsatian Catholics protesting against what they held were attempts to laicize their schools, and the breach was widening between themselves and the Popular Front Government. In May, the French Confederation of Christian Workers felt it necessary to proclaim the legitimate and elementary rights of its 500,000 members and to protest attempts by the Popular Front Government to infringe these rights.

Delegates representing 1,508,037 members in eight countries assembled in Paris for the seventh International Congress of Christian Syndicates. The year marked the third centenary of the birth at Laon, France, of Père Jacques Marquette. Jean Cardinal Verdier dedicated in November the one hundredth church he has built since becoming Archbishop of Paris, and about the same time the Most Rev. Paul Richaud, Auxiliary Bishop of Versailles and president of the National Committee for Catholic Education, made public the estimate that Catholic education was saving the French Government more than 1,500,000,000 francs annually.

BELGIUM

The Belgian Episcopate early in 1937 felt it necessary to emphasize the need for union among Catholic youths, warning against the dangers of Communism. Catholic leaders also felt it necessary to warn against the Rexist Party, which had Fascist tendencies, as a danger to the country and to the Church. The Rexists went down to a bad defeat in the April elections.

At the annual meeting of the Belgian Peasant League (Boerenbond), it was announced that, after the troubles of two years ago, new life is surging through this Christian So-

cial institution. Because of strong opposition in Belgium, a "Godless Congress" to which Moscow was sending 30 delegates was transferred from that country to England.

AUSTRIA

Two of the most interesting developments of the year in Austria had to do with learning. One was the announcement of plans to change the name of the University of Salzburg to St. Albertus University and to make of it a national Catholic university such as was well projected when the World War intervened. The other was the statement by Sir Arthur Stanley Eddington, the celebrated English astronomer and physicist, present in Vienna for a scientific lecture, that "modern physics lead to God, not away from Him."

The Austrian plan of a State founded on the principles of the Papal Encyclical *Quadragesimo Anno* was notably advanced by the perfecting of a plan of co-operation between employers and employees in industry and commerce. Vienna began to plan for the Fourth International Congress of Catholic Journalists which it will entertain in May, 1938.

THE EASTERN CHURCHES

By E. R. Hardy, Jr.

General Theological Seminary, New York

RUSSIAN ORTHODOX CHURCH

The Sobor (synod) of the Russian Orthodox Church in the United States of America met in New York in October, 1937. Plans were made for the establishment of theological seminaries in the United States and in Alaska, where the work of the Russian Church in America first began in the early 19th century. Organizational decisions included greater centralization of authority in the hands of the Metropolitan, the Most Rev. Theophilus Pashkovsky. The appointment of clergy to parishes and the acceptance of applications for ordination are to be under his authority. The Russian Church in America defined its position with reference to the Sobor at Karlovtzy (Jugoslavia), at which nearly all the Russian jurisdictions outside Russia are represented, to be one of co-operation, not subordination. The proceedings of the New York Sobor were therefore reported to Karlovtzy "for information" and not "for approval." A larger number of young people were present among the delegates, which was noted as a sign of increasing interest in the Church on the part of its younger generation.

HELLENIC ORTHODOX CHURCH

The chief event in the Greek Church (Archdiocese of North and South America) during the year was the establishment of a junior seminary at Pomfret, Conn., which opened with 15 students and four instructors. This seminary will take boys from American schools and prepare them after two years of study to complete the study of theology at the Seminary of Chalki (Constantinople) or the University of Athens. Increasing interest is being taken in the methods of religious education in Greek schools, especially with reference to securing the attendance of children at and their participation in the Liturgy.

CARPATHO-RUSSIANS (RUTHENIANS)

Two groups of Carpatho-Russians have taken definite steps towards the formation of organizations separate from Rome. To understand this news it is necessary to say a word about the background of these groups. In the 16th–17th centuries considerable numbers of former Orthodox in the western Ukraine entered into union with the Roman See, becoming what

are usually known in English as Uniats, that is, adherents of the Eastern rites who acknowledge the papal authority but retain their own liturgical customs and canon law. From the Roman Catholic point of view the Uniats are the legitimate Eastern Churches, and their position as Catholics, although not Latin, has been protected by successive Popes. Some of the Ukrainian Uniats were in Galicia, then Polish, later Austrian, now once more Polish; another group in northern Hungary, now mostly part of Czechoslovakia. The former are commonly known as Ruthenians, the latter as Pod-Carpathians (sub-Carpathians) or Carpatho-Russians. In the later 19th century immigration brought considerable numbers of Ruthenians and Carpatho-Russians to the United States. Parishes were formed, at first subject, however, to the American hierarchy. Unsympathetic treatment on the part of American Catholics led to a considerable secession from the Church, a number of Carpatho-Russian parishes attaching themselves to the Russian Orthodox Church. In 1907 a Bishop was appointed, at first as auxiliary to the American Bishops for Ruthenians; but at the same time the papal letter *Ea semper* attempted to introduce the celibacy of the clergy, which in Europe is not required, among the American Ruthenians. This led to a further secession. A group of Ruthenian parishes, thus become independent, were organized under the guidance of the Greek Church. In 1937 a Bishop, Mgr. Bohdan, was appointed for them by the authority of the Oecumenical Patriarch, and consecrated in April by the Greek Archbishop Athenagoras in New York.

Meanwhile in 1924 the Ruthenians and Carpatho-Russians who remained in communion with Rome were put under the jurisdiction of two Bishops —for the former, Constantine Bohachevsky at Philadelphia, for the latter, Basil Takach at Homestead, Pa. In 1929 the papal decree *Cum data* regulated the administration of these jurisdictions and incidentally revived the attempt of 1907 to forbid the ordination of married clergy in or their migration to America. This led to further difficulties, especially among the Carpatho-Russians, and to the secession of a group of their parishes. Meeting in convention at Bridgeport, Conn., in November, they voted to organize as an automonous Orthodox Church, and elected the Rev. O. P. Chormock as Bishop.

Lay activity is prominent in both the Ruthenian and Carpatho-Russian Churches, whether Uniat or Orthodox. The affairs of parishes are controlled by annual parish meetings. There are mutual aid societies, organized on a large scale, and several periodicals, partly in English, partly in their own languges, which are forms of Russian. There are probably about 300,000 Carpatho-Russians and a somewhat smaller number of Ruthenians in the United States.

There are other smaller groups of Uniats, mostly Syrian, in the United States. Efforts are being made in the Roman Catholic Church, with the support of several Catholic periodicals, to spread among both the clergy and the laity a more sympathetic knowledge of the Uniat traditions and rites.

OTHER ORTHODOX CHURCHES

No notable events occurred during the year in the smaller Orthodox Churches of America,—Rumanian, Syrian, Serbian. The Syrian Church suffered a great loss in the death of the Very Rev. Basil Kerbawy, for many years connected with St. Nicholas' Cathedral in Brooklyn and prominent in secular as well as church affairs in the Syrian community of New York.

ORTHODOX CHURCHES ABROAD

Several of the difficulties which have impeded the progress of the Orthodox Churches in the last few years were resolved during 1937. The Oecumenical Patriarch of Constantinople, Benjamin, recognized the Church of Albania as autocephalous, thus granting to the Church in that country the autonomy which some

Bishops, under pressure from their government, attempted to secure irregularly some years ago. In Egypt the election of the Patriarch Nicholas of Alexandria was duly recognized by the Egyptian Government. On the other hand, the divisions in the Patriarchate of Antioch and the difficulties with the British Government which have prevented the proper functioning of the Church of Cyprus and the installation of the Patriarch-elect of Jerusalem still continue.

There is no indication that the situation of the Church in Russia has improved. Official documents, however, calling for an intensification of anti-religious propaganda give as reason for this a revival of church activity, and careful travellers report that the congregations, while estimates of the total number of worshippers are hard to make, show a gratifying proportion of young people. During the year the Metropolitan Peter died; he was appointed by the late Patriarch Tikhon to represent him after his death until a new election could be held, but had been kept in prison since. Latest reports indicate that the proclamation of "religious liberty" in the new Constitution was followed by further arrests of clergy and church people and attempts to discredit the clergy on political and personal charges.

A significant gathering was the Orthodox Congress of Theology, held at Athens in November, 1936. It was attended by a number of scholars, mostly from the Balkan Churches and the Russian Churches in Exile. The discussions covered a number of theological and practical questions; and, as might be expected, some were more anxious for the correct preservation of the Orthodox tradition, others for its vigorous application to the problems of today.

ORTHODOXY AND THE MOVEMENT FOR CHURCH UNITY

Delegations from the various Orthodox Churches were present at the Life and Work Conference at Oxford in July and the Faith and Order Conference at Edinburgh in August. Among these were from America Archbishop Antony of the Syrian Church and Archimandrite Kavadas of the Greek. It was due to proposals from the Orthodox side that the subject of the communion of saints and the veneration of the Virgin were included among the topics discussed at Edinburgh. In the proposed World Council of Churches there are to be several Orthodox members; by special request the American electoral conference for this council, which met at Washington early in January, 1938, asked that the list be enlarged to include an American Orthodox delegate. It may sometimes be doubted, however, whether formal presence at conferences does not provide occasions of further misunderstanding rather than understanding, unless supplemented by extensive informal contact, especially between bodies of such different traditions. An interesting experiment along this line, enlarging the contacts which have long existed between Anglicanism and Orthodoxy, is an exchange of theological students between Rumania and England.

In the other direction one of the larger divisions of the Malabar Christians in India, since the 17th century in communion with the monophysite Patriarch of Antioch, has been negotiating with a view to entrance into the Orthodox Communion.

JUDAISM AND JEWISH COMMUNAL AFFAIRS

By Harry Schneiderman

Editor, *The American Jewish Year Book*

GENERAL

During 1937, as in the years since 1933, when the present régime in Germany began, events of Jewish interest abroad and happenings at home connected with foreign affairs continued to divert the attention of the Jewish community from its domestic concerns. As in the past four years, developments in, and those at home related to, Germany were in the foreground of this interest. Events in Poland held second place up to the beginning of July, when the report of the British Royal Commission, recommending the partition of Palestine, was published. Since then, the future of Palestine has been, in many Jewish circles, the paramount topic of discussion.

AMERICAN REACTION TO NAZI POLICIES

The Jewish community was profoundly stirred by various signs that American public opinion continued to disapprove of the Nazi regime in Germany. Such signs included the refusal of a number of American universities to participate in the celebration of the 250th anniversary of the University of Goettingen, in June 1937; the protest of George, Cardinal Mundelein, Roman Catholic Archbishop of Chicago, in May, against the anti-Catholic drive of the Nazi régime; the open letter to Chancellor Hitler of the Rev. Charles S. Macfarland, general secretary-emeritus of the Federal Council of the Churches of Christ in America, published in June 1937; the resolution of the Federal Council protesting against the Nazi government's ban against the attendance of German delegates at the World Conference of the Churches, held at Oxford, England, in July; and, in general, the attitude of protest of the American press against Nazi policies, as reflected in editorial comment on various events in Germany, especially the vituperative reaction of the "co-ordinated" press in that country to American protests, and to such innocent activities as the appeal of the American Christian Committee for Refugees from Germany for contributions to a fund for the relief of such refugees.

On several occasions, American demonstrations evoked official protests from the German government. This was the case when, at a meeting of the women's division of the American Jewish Congress in New York, in March, Mayor F. H. La Guardia, referred to Chancellor Hitler as "that brown-shirted fanatic, who is now menacing the peace of the world." The German Embassy again protested when, also in March, at a mass meeting in New York City, held under the auspices of several Jewish organizations, Mayor La Guardia again made a remark which was regarded by the Embassy as an insult to the Fuehrer.

In the meantime, the United States Government had lodged a protest with the German foreign office when *Der Angriff*, a newspaper known to be the mouthpiece of Dr. Paul Joseph Goebbels, Nazi Minister of Public Enlightenment and Propaganda, referred to the women, who attended the meeting at which Mayor La Guardia had made his "brown-shirted fanatic" remarks, as "women of the streets." In the semi-official communiqué, the Nazi government dismissed the incident in language which was obviously intended for domestic consumption.

EVENTS IN GERMANY

The Jewish community continued to follow events in Germany with attentive anxiety. Developments in that country continued to show no deviation, on the part of those in power in that country, from the path they had set out upon in 1933, a path leading to the destruction of

the Jewish minority. Edicts, ordinances, and administrative regulations progressively impaired the right of Jews to make a living; the gaps left between these strands of the net were filled by judicial interpretation and by so-called "individual" action of officials of the Nazi party.

In every field, the Jews of Germany were burdened during the year with an amazing number of restrictions that piled up day by day and week by week, slowly circumscribing and strangling their occupational activity and their cultural life. Every once in so often a trade or a town was able to announce jubilantly that it was "Judenrein." The net result has been the emigration of the comparatively small number who are able to leave the country, and the progressive increase in the number of those remaining who must be cared for by philanthropic agencies.

Not even these agencies were exempt from arbitrary interference. The most flagrant example of such interference was the dissolution, in April, of the International Order B'nai B'rith. This organization, whose headquarters are in the United States, was one of the most helpful of the agencies engaged in mitigating the hardships resulting from the anti-Jewish drive. The order of dissolution forced the closing of all B'nai B'rith lodges in Germany, the confiscation of their property, and the transfer of their social welfare activities to the various local Jewish communal organizations. The reason for the drastic action against B'nai B'rith, according to *The New York Times*, was obvious from the nature of the questions put to the arrested officers. They were concerned principally with the connection of the lodge with similar organizations abroad, especially the United States. The intimation was given that the Gestapo held the Jewish organizations principally responsible for anti-German campaigns in America.

The reports of the dissolution of the B'nai B'rith lodges in Germany shocked the entire Jewish community of the United States and evoked severe criticism in the general American press. Protests were lodged with the State Department by the B'nai B'rith, the American Jewish Committee, and the Federal Council of Churches of Christ in America. These were met with expressions of sympathy and the assurance that the matter was receiving earnest consideration.

EVENTS IN POLAND

On Jan. 10, 1937, in its report to the thirtieth annual meeting of the American Jewish Committee, the Executive Committee stated that, in conferences with Polish diplomatic representatives, especially Count Jerzy Potocki, Polish Ambassador to the United States, representatives of the Committee had expressed profound concern over recent developments in Poland. "It was indicated," said the Executive Committee, "that, since the death of Marshal Pilsudski, discrimination against the Jews had grown more widespread, physical outbreaks had become more numerous, and, while anti-Semitism had grown more flagrant, the authorities had apparently become more indulgent to such agitation than the previous government."

The Committee had also protested against the growing agitation in Poland for the mass emigration of Jews. Coming at a time when the doors of all other countries were virtually closed to immigration, this agitation has caused the most profound anxiety among American Jews. They see in this demand, which is not only highly unjust but also impossible of execution, encouragement to those elements in Poland which have been carrying on for years a merciless anti-Jewish boycott, which has led to numerous outbreaks of violence. Led by the American Jewish Committee and the American Jewish Congress, the community protested vigorously, through diplomatic channels and public demonstrations against the outrageous proposal. Further ground for indignant protest was given by large-scale physical attacks on Jews which occurred in May at Brescz and in June at Czenstochowa.

With the opening, in October, of

the new scholastic year, came a widespread campaign for so-called "ghetto benches" in Polish universities, colleges, and professional schools, aimed at segregating Jewish students. This agitation was vigorously condemned in the United States in the press and in academic circles.

OTHER EUROPEAN AREAS

Besides Germany and Poland, there were other areas in Europe, particularly Roumania and Italy, where events affecting Jews engaged the attention of the Jewish community. Representative organizations were profoundly disappointed with developments in Roumania. In recent years, especially since 1933, when Roumanian political leaders who favor a pro-German foreign policy have intensified anti-Jewish agitation, events have occurred which appear to forbode a return of the Jews of the country to the degraded status they occupied in old Roumania before the World War.

Concern with the situation of Jews in Italy was aroused by an anti-Jewish press campaign, a hitherto unknown phenomenon. Anxiety was somewhat allayed by the declaration of persons, claiming to speak in the name of Mussolini, that no change was contemplated in the status of complete equality of Jews with other Italian citizens.

PALESTINE PROBLEMS

All sections of the Jewish community watched with great interest the activities of the British Royal Commission, appointed to investigate the causes of Arab outbreaks in Palestine, and the consideration of the Commission's report by the British Parliament, the Permanent Mandates Commission and other organs of the League of Nations, and by the World Zionist Organization and the Jewish Agency for Palestine.

The British Government announced, in May 1936, its intention to send a Royal Commission to investigate the causes of the latest and most serious Arab outbreak since 1922 when the mandate was conferred on Great Britain. This outbreak began on April 10, 1936 and lasted until Oct. 12 of the same year when it was officially but not actually terminated by the Arab High Committee, whose proclamation of a strike had initiated it. The Royal Commission, which had waited for the cessation of hostilities, arrived in Palestine Nov. 11, 1936. From that date to Jan. 13, 1937, it conducted hearings at which government officials and representative Arabs and Jews were interrogated regarding the situation. These hearings were followed by others in London.

In the spring of 1937, considerable anxiety was aroused among Zionists and Zionist sympathizers in many countries, including the United States, by insistent reports from England that the Royal Commission was expected to recommend the partition of Palestine. On June 15, the Pro-Palestine Federation of America, an organization of non-Jews, sent a petition to President Roosevelt, praying that the United States use its good offices to prevent modification of the Palestine Mandate, which, the petitioners averred, should not be effected without the approval of the United States, which had an interest in the Mandate under a treaty between the United States and Great Britain. On July 8, the publication of the report with its recommendation for the partition of Palestine, into a Jewish state, an Arab region to be joined to Transjordania, and a section to remain under British Mandate, evoked widespread discussion.

American Zionists were represented by 91 of the 485 delegates at the Zionist Congress, at which a sharp division of opinion became manifest as soon as debate on partition started. Dr. Chaim Weizmann, the distinguished British chemist who is President of the World Zionist Organization, denied the conclusion of the Royal Commission that the Mandate was unworkable, which was the basis of the partition proposal; but he urged the Congress to accept the partition in principle and to empower the executive to discuss the details with the British government. The American delegation split on the

issue. A resolution in the sense of Dr. Weizmann's suggestion was finally adopted by a vote of 300 to 158, with 27 delegates not voting.

The action of the World Zionist Organization was a profound disappointment to non-Zionist co-operators in the up-building of Palestine, who are represented in the Jewish Agency for Palestine, which is the body officially recognized in the Mandate as the competent representative of all Jews interested in the execution of the aims of that instrument. These non-Zionists oppose the partition of Palestine for many reasons, chiefly because they believe that the proposed Jewish state cannot be self-sustaining; that the reduced area of Jewish settlement would drastically curtail the openings for Jewish immigration, which are so acutely needed because of the expulsive force of persecution in Europe; and that efforts to reach a *modus vivendi* with the Arabs have not been exhausted. At the meeting of the Council of the Jewish Agency, which followed the Zionist Congress, the American non-Zionist delegates, led by the late Felix M. Warburg, succeeded, with great difficulty, in securing the adoption of a resolution instructing the Executive of the Agency to request the mandatory Power to initiate conferences between Jewish and Arab representatives, in an effort to reach an accord which would make possible the continuation of the *status quo*.

Zionist and non-Zionist groups in the Jewish community are continuing the discussion of the partition proposal. At its 23rd annual convention, at Atlantic City in October, 1937, Hadassah, the Women's Zionist Organization, adopted, by a large majority, a resolution rejecting the proposal. Partition was also the subject of discussion in the United States Senate.

AID FOR OVERSEAS COMMUNITIES

Interest in the situation of Jews in Germany, in Poland, and in other European countries, was paralleled by efforts on the part of the American community to assist Jews in those lands. The community's chief agency for this task, which has been prosecuted since the outbreak of the World War, is the Joint Distribution Committee (J.D.C.). Fund-raising activities for Palestine projects are centered in the United Palestine Appeal.

On Feb. 7, the Plan and Scope Committee of the J.D.C., meeting in Pittsburgh, decided upon a quota of $4,650,000 for the 1937 campaign. It was reported that Jews in 1,100 cities and towns in the United States and Canada contributed a gross total of $2,801,000 to the 1936 campaign of the J.D.C. The appropriations voted for the first half of 1937, which totalled $1,145.000, included $542,-500 for aid to Jews in Germany and refugee countries, and $533.000 for Jews in Eastern Europe, chiefly Poland and Roumania. The remainder, $69,000, was for administrative and emergency use. On June 27, the J.D.C. announced that it had raised $2,370,-000 in the first six months of its 1937 campaign for $4,650,000 for overseas aid.

Several items regarding the activities of American organizations working for Palestine reconstruction deserve recording. On April 18, 1937, the United Palestine Appeal announced that the sum of $2,649,000 had been spent by its constituent, the Palestine Foundation Fund, during the 16 months from October, 1935 to February, 1937, for the primary needs of the 43,972 Jews who entered Palestine in that period.

On Dec. 29, 1936, Felix M. Warburg and Bernard Flexner, as American liquidating trustees of the Emergency Fund for Palestine which was gathered in 1929, after the anti-Jewish riots there, made public a report of the manner in which the Fund was handled. The report revealed that contributions to the Fund amounted to $3,000,000 and that an additional $500,000 was received from other sources. The report explained that the Emergency Fund achieved two things: it gave immediate relief to the victims of the riots, and it made possible the reconstruction of ruined communities and generally consolidated the position of the Jewish settlement.

ANTI-JEWISH AGITATION

In respect of anti-Jewish agitation in the United States, 1937 was a quiet period, especially when compared with the pre-election months of 1936. Pro-Nazi agitation was carried on by scattered German groups in a few cities. There were, however, several events which caused disquietude in Jewish circles. One of these was a mass meeting in New York City, on Lincoln's Birthday, which was addressed not only by German Nazi sympathizers but also by persons belonging to anti-Soviet Russian and pro-fascist Italian groups. Another disturbing sign was the increasing number of summer camps operated by the German-American Bund, whose object is "to create a united German front in America." There were also indications that American Nazis were making efforts to form "cells" in companies of the New York State National Guard.

On the whole, however, these moves did not help the Nazi cause or increase its prestige. American residents in the vicinity of actual or proposed Nazi camps registered their hostility to them as centers for the propagation of un-American ideas; New York State authorities issued orders breaking up pro-Nazi "cells" in the State militia, and public opinion generally was hostile to a movement which would transplant alien doctrines to American soil. At the same time political leaders did not regard the movement as of any great importance, and a resolution for a Congressional investigation was voted down in April in the House of Representatives.

MOVEMENTS FOR INTER-GROUP GOOD WILL

As in past years, the forces of ill-will met with more than their match in the much more influential and reputable agencies working for the maintenance of inter-group harmony and understanding in the United States. Especially active in this direction was the National Conference of Jews and Christians, which was very active in promoting seminars and institutes for the discussion of better group relations between Protestants, Catholics and Jews. The Conference also organized "round tables" of representatives of the three faiths in a number of cities, and good will "pilgrimages" of teams, each consisting of a Protestant Minister, a Catholic priest, and a rabbi, which made tours of a number of sections, carrying the message of inter-group harmony into many parts of the country. The fourth annual celebration of Brotherhood Day under the sponsorship of the Conference took place on Feb. 21–22, 1937. Through its news service, also, the Conference is exerting a significant, wholesome influence for inter-faith good will. Its Institute of Human Relations held at Williams College, Williamstown, Mass. the last week in August was a large-scale project in the same direction.

Besides the National Conference of Jews and Christians, there were other bodies, notably the National Committee for Religion and Welfare Recovery, which worked during the year to stimulate loyalty to, and financial support of, church and synagogue. Besides these organized activities, there were numerous sporadic acts and instances of inter-group co-operation, all tending to promote good will. For details the reader is referred to Volume 39 of the *American Jewish Year Book*.

JEWISH COMMUNAL LIFE

To a great extent, the religious thought of the Jewish community is expressed in the pronouncements of the congregational and rabbinical organizations of the three so-called "wings" of Judaism in America—Orthodox, Conservative, and Reform. At their meetings during 1937, these organizations discussed the situations confronting Jews in various countries, questions of congregational policy, ritual and Jewish law, and the attitude of religion toward social reform programs. Among the most notable of the numerous formulations of attitude were (1) the endorsement by the Rabbinical Assembly of the

Jewish Theological Seminary of America of "the general spirit of the New Deal" and legislation for "complete neutrality of the United States" in the event of war; (2) the declaration of the Women's League of the United Synagogue of America that the substantive need of the Jewish community of America is a well defined program of Jewish education, and that the problem is peculiarly that of Jewish women; (3) the expression of the view, at the convention of the Union of American Hebrew Congregations (Reform) that improvements in the service of the synagogue, especially in the matter of homiletics, were urgently needed; (4) the adoption by the Central Conference of American Rabbis of a program for marriage reform including uniform marriage laws in all States, and the suggestion at the meeting of the Conference that an appeal be made to Catholics and Protestants to join with Jews in a co-operative alliance of religious forces in the struggle to save democracy.

EDUCATION

In the field of Jewish education the most important event was the celebration of the semi-centennial of the Jewish Theological Seminary of America which began in December, 1936 and concluded with the fiftieth annual convocation June 6, 1937. The celebration took the form of a series of educational programs which were participated in by distinguished publicists and scholars, including Governor Herbert H. Lehman of New York, President Nicholas Murray Butler of Columbia University, Henry Sloane Coffin of the Union Theological Seminary, and James Bryant Conant of Harvard University. A Conference of Jewish Affairs and Institutes of Bible Study and Post Biblical Literature were also part of the Seminary celebration. The Rabbi Isaac Elchanan Theological Seminary, the largest Orthodox Jewish theological school in the world, celebrated its 50th anniversary during the year.

SOCIAL WELFARE

In the field of social welfare, for which the community is well organized, there was a great deal of activity during 1937. The National Council of Jewish Women which marked its forty-fourth anniversary, in January, announced an enlarged naturalization and Americanization program particularly on behalf of Jews recently arrived, of whom a large proportion are refugees from Germany. Jewish organizations took an active part in relieving victims of the floods in middle western States in January and February. The B'nai B'rith made public the report of a survey of the scholastic activities of Jewish students at American colleges. Besides many other interesting facts, the report disclosed that, of the aggregate registration of 1,150,000 students in 1935–36, a total of 105,000 were Jews. According to a report of the National Council of Jewish Federations and Welfare Funds, published at the end of 1936, its 89 member organizations contributed $48,000,000 for welfare needs in the United States and abroad, 91 per cent of the total being disbursed in the United States. The foregoing are but a few of the many items of interest in Jewish social welfare work during 1937.

ZIONIST MOVEMENT

A large section of the Jewish community is closely interested in the Zionist movement, and an even larger section, while not Zionist, is desirous of aiding in the upbuilding of a Jewish center in Palestine. A great deal of the communal life of American Jews is, therefore, concerned with the Zionist movement and co-operation in the upbuilding of Palestine and in the maintenance of educational and social welfare institutions there. The numerous organizations created by the community for these purposes were unusually active during 1937, because of the continuing crisis in Palestine, the partition proposal of the Royal Commission, and the World Zionist Congress in Zurich.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

NATIONAL CHURCHES

American Baptist Historical Society, Chester, Pa.

American Unitarian Assn., 25 Beacon St., Boston, Mass.

Board of Direction of the General Synod of the Reformed Church in America, 25 E. 22nd St., New York City.

Christian Science Church, 11 W. 42nd St., New York City.

Congregational Christian General Council, 287 Fourth Ave., New York City.

Free Church of America, 25 Beacon St., Boston, Mass.

Freethinkers' of America, Inc., 317 W. 34th St., New York City.

Friends' General Conference of the Religious Society of Friends, 1515 Cherry St., Philadelphia, Pa.

General Conference of Seventh-Day Adventists, 6840 Eastern Ave., N.W., Takoma Park, Washington, D.C.

General Council of the Presbyterian Church in the U.S.A., 156 Fifth Avenue, New York City.

National Lutheran Council in America, 39 E. 35th St., New York City.

National Spiritualist Assn., 600 Penn Ave., S.E., Washington, D.C.

Northern Baptist Convention, 152 Madison Ave., New York City.

Society for Ethical Culture of New York, 2 W. 64th St., New York City.

Theosophical Society in America, Wheaton, Ill.

Union of American Hebrew Congregations, Merchants' Building, Cincinnati, Ohio.

Union of Orthodox Jewish Congregations of America, Amsterdam Ave. and 186th St., New York City.

United Lutheran Church in America, 39 E. 35th St., New York City.

United Synagogue of America, Broadway and 122nd St., New York City.

Universalist General Convention, 16 Beacon St., Boston, Mass.

Vedanta Society, 34 W. 71st St., New York City.

Volunteers of America, 34 W. 28th St., New York City.

INTERNATIONAL ORGANIZATIONS

Association for the Promotion of Christian Unity, Mission Building, Indianapolis, Ind.

Baptist World Alliance, Bates College, Lewiston, Me.

Central Bureau of Evangelical Churches in Europe, 105 E. 22nd St., New York City.

Committee on Co-operation in Latin America, 254 Fourth Ave., New York City.

Committee on Friendly Relations Among Foreign Students, 347 Madison Ave., New York City.

Continuation Committee of World Conference on Faith and Order, 111 Fifth Ave., New York City.

Ecumenical Methodist Conference, 720 Omaha Bank Building, Omaha, Neb.

International Assn. of Daily Vacation Bible Schools, 100 E. 42nd St., New York City.

International Association for the Promotion of Liberal Christianity and Religious Freedom, 25 Beacon St., Boston, Mass.

International Congregational Council, 287 Fourth Ave., New York City.

International Society of Christian Endeavor, 41 Mt. Vernon St., Boston, Mass.

Lutheran World Convention, 39 E. 35th St., New York City.

Near East College Association, Inc., 30 Rockefeller Plaza, New York City.

Religious Education Association, 59 E. Van Buren St., Chicago, Ill.

Universal Christian Council on Life and Work, 105 E. 22nd St., New York City.

WESTERN SECTION OF ALLIANCE OF REFORMED CHURCHES THROUGHOUT THE WORLD HOLDING THE PRESBYTERIAN SYSTEM, 226 West Mowry St., Chester, Pa.
WORLD STUDENT CHRISTIAN FEDERATION, 347 Madison Ave., New York City.
WORLD SUNDAY SCHOOL ASSN., 51 Madison Ave., New York City.

INTERCHURCH ORGANIZATIONS

AMERICAN BIBLE SOCIETY, Park Ave. and 57th St., New York City.
AMERICAN SUNDAY SCHOOL UNION, 1816 Chestnut St., Philadelphia, Pa.
CHAPLAIN'S AID ASSN., 401 W. 59th St., New York City.
CHICAGO TRACT SOCIETY, 440 S. Dearborn St., Chicago, Ill.
CHRISTIAN CO-OPERATIVE FELLOWSHIP IN NORTH AMERICA, 5757 University Ave., Chicago, Ill.
CHRISTIAN UNITY FOUNDATION, 70 Fifth Ave., New York City.
CHURCH PEACE UNION, 70 Fifth Ave., New York City.
COMMUNITY CHURCH WORKERS OF U.S.A., 77 W. Washington St., Chicago, Ill.
CONFERENCE OF THEOLOGICAL SEMINARIES AND COLLEGES IN THE U.S.A. AND CANADA, Gettysburg, Pa.
COUNCIL OF CHURCH BOARDS OF EDUCATION, 19 West 44th St., New York City.
EPWORTH LEAGUE OF THE METHODIST EPISCOPAL CHURCH, 740 Rush St., Chicago, Ill.
FEDERAL COUNCIL OF THE CHURCHES OF CHRIST IN AMERICA, 297 Fourth Ave., New York City.
FELLOWSHIP OF CHRISTIAN CO-OPERATION, 2929 Broadway, New York City.
FREE CHURCH OF AMERICA, 25 Beacon St., Boston, Mass.
NATIONAL COUNCIL OF PROTESTANT EPISCOPAL CHURCHES, 281 Fourth Ave., New York City.
NATIONAL RELIGION AND LABOR FOUNDATION, 304 Crown St., New Haven, Conn.
THREEFOLD MOVEMENT, 315 Fourth Ave., New York City.

AUXILIARY ORGANIZATIONS

CATHOLIC CHURCH EXTENSION SOCIETY OF THE U.S.A., 306 N. Michigan Ave., New York City.
CATHOLIC GUARDIAN SOCIETY, 485 Madison Ave., New York City.
CATHOLIC PROTECTIVE SOCIETY, 477 Madison Ave., New York City.
CHURCH LEAGUE FOR INDUSTRIAL DEMOCRACY, 154 Nassau St., New York City.
COMMUNITY CHURCH WORKERS OF THE U.S.A., THE, 1302 Chicago Temple, 77 W. Washington St., Chicago, Ill.
LORD'S DAY ALLIANCE, 156 Fifth Ave., New York City.
NATIONAL CONFERENCE OF JEWS AND CHRISTIANS, 300 Fourth Ave., New York City.
WOMAN'S CHRISTIAN TEMPERANCE UNION, 1730 Chicago Ave., Evanston, Ill.
WOMAN'S NATIONAL SABBATH ALLIANCE, 156 Fifth Ave., New York City.
YOUNG MEN'S CHRISTIAN ASSN., 347 Madison Ave., New York City.
YOUNG MEN'S HEBREW ASSN., 71 W. 47th St., New York City.
YOUNG WOMEN'S CHRISTIAN ASSN., 600 Lexington Ave., New York City.
YOUNG WOMEN'S HEBREW ASSN., 31 West 110th St., New York City.

RELIGIOUS PUBLICATIONS

AMERICAN BAPTIST HISTORICAL SOCIETY, Upland Ave., Chester, Pa.
AMERICAN BAPTIST PUBLICATION SOCIETY, 1701 Chestnut St., Philadelphia, Pa.
AMERICAN BIBLE SOCIETY, Bible House, New York City.
AMERICAN TRACT SOCIETY, 7 W. 45th St., New York City.
CHICAGO TRACT SOCIETY, 440 S. Dearborn St., Chicago, Ill.
GIDEONS, 202 S. State St., Chicago, Ill.
NATIONAL TESTAMENT AND TRACT LEAGUE, 200 Kellogg Bldg., Washington, D.C.
POCKET TESTAMENT LEAGUE, 156 Fifth Avenue, New York City.
RELIGIOUS EDUCATION ASSN., 59 East Van Buren St., Chicago, Ill.
SOCIETY FOR THE PROPAGATION OF THE FAITH, 462 Madison Ave., New York City.

MISSIONARY

AGRICULTURAL MISSIONS FOUNDATION, 156 Fifth Ave., New York City.

AMERICAN BOARD OF COMMISSIONERS FOR FOREIGN MISSIONS, 14 Beacon St., Boston, Mass.

AMERICAN McALL ASSN., 112 S. 16th St., Philadelphia, Pa.

AMERICAN MISSION TO LEPERS, 156 Fifth Ave., New York City.

CHRISTIAN AND MISSIONARY ALLIANCE, 260 W. 44th St., New York City.

COMMITTEE OF REFERENCE AND COUNCIL, 156 Fifth Ave., New York City.

COUNCIL OF WOMEN FOR HOME MISSIONS, 105 E. 22nd St., New York City.

FEDERATION OF WOMEN'S BOARDS OF N.A., 419 Fourth Ave., New York City.

HOME MISSIONS COUNCIL, 297 Fourth Ave., New York City.

INTERNATIONAL MISSIONARY COUNCIL, 156 Fifth Ave., New York City.

MISSIONARY EDUCATION MOVEMENT OF THE UNITED STATES AND CANADA, 150 Fifth Ave., New York City.

NATIONAL COUNCIL OF JEWISH WOMEN, 625 Madison Ave., New York City.

NEAR EAST RELIEF, 2 West 46th St., New York City.

STUDENT VOLUNTEER MOVEMENT FOR FOREIGN MISSIONS, 254 Fourth Ave., New York City.

WOMAN'S UNION MISSIONARY SOCIETY, 67 Bible House, New York City.

PART SIX

SCIENCE — PRINCIPLES AND APPLICATION

DIVISION XVIII

MATHEMATICS AND ASTRONOMY

MATHEMATICS

By Charles N. Moore

Professor, University of Cincinnati

GENERAL

In the article on mathematics in The American Year Book for 1936 there was given an account of the various national organizations through whose facilities and activities the work of advancing mathematical knowledge and improving mathematical education was aided and stimulated. There was also given a list of periodicals engaged in the publication of important developments in the mathematical field. In the present article it will be presumed that the reader is acquainted with this general organization of mathematical work. In case he is not, reference to the previous article will serve to furnish adequate background for the following account of mathematical activities during 1937.

AMERICAN MATHEMATICAL SOCIETY

Meetings.—During 1937 the American Mathematical Society met in New York City in Februarv. March, and October; in Chicago and in Stanford, Calif. in April; in State College, Penn. in September; in Iowa City, Ia. and Pasadena, Calif. in November; and in Indianapolis in December.

Topics of New York Meeting.—At the meeting in New York City in February, Prof. T. R. Hollcroft, of Wells College, delivered an invited address on the topic: "The existence of algebraic plane curves with given singularities." At the meeting in March in the same city, one afternoon was devoted to a symposium on Laplace integrals at which the following addresses were delivered: "Functions analytic in a half plane and Laplace transforms," by Prof. J. D. Tamarkin, Brown University; "Summability of Laplace integrals," by Prof. Einar Hille, Yale University; "The iterated Laplace transform," by Prof. D. V. Widder, Harvard University. The discussion of these various addresses was led by Professors H. F. Bohnenblust and Salomon Bochner, Princeton University.

Algebraic Geometry Conference.—There was also held in connection with the March meeting of the Society, and immediately prior to it, a conference on algebraic geometry at which the following papers were presented: "Formal power series in albebraic geometry," by Prof. Solomon Lefschetz, Princeton University; "A generalization of Lurŏth's Theorem and the existence of normal extension fields with a given Galois group," by Dr. O. F. G. Schilling, John Hopkins University; "Zero-dimensional ideals in rings of integral functions of several variables and their connections with the theory of singularities," by Prof. Oscar Za-

riski, John Hopkins University; and "The arithmetic of an algebraic variety," by Prof. A. Weil.

Chicago Symposium.—At the spring meeting in Chicago, in accordance with a long established custom, an invited Symposium Lecture was presented. The lecturer for the current year was Dr. W. T. Reid, University of Chicago, who spoke on the topic: "Boundary value problems in the calculus of variations." The meeting was the largest spring meeting in Chicago in the history of the Society.

State College Lectures.—In connection with the summer meeting at State College there was presented, also in accordance with long established custom, a series of Colloquium Lectures. The invited speaker was Prof. John von Neumann, of the Institute for Advanced Study, who spoke on the general topic: "Continuous geometries." The lectures provided the group attending with a systematic treatment of certain new and important developments in abstract geometrical theory, having particular significance in the field of high-dimensional geometries. The theory developed finds application in the mathematical development of quantum theory, and furnishes an abstract background for the work by F. J. Murray and John von Neumann on rings of operators, referred to in the 1936 issue of THE AMERICAN YEAR BOOK.

Addresses.—In addition to the Colloquium Lectures there was given an invited address by Prof. Hassler Whitney, Harvard University, on the topic: "Topological properties of differentiable manifolds," and about 100 shorter papers by various speakers who presented their latest research contributions. The meeting was the largest summer meeting in the history of the Society, with the exception of the meeting at Cambridge, Mass. in 1936 which benefited from its association with the Tercentenary celebration of Harvard University and the presence there of a large number of distinguished foreign scientists, invited in connection with that celebration.

At the October meeting in New York City there was delivered an invited address by Prof. D. J. Struik, Massachusetts Institute of Technology, on the topic: "The application of tensor analysis to problems of electrical engineering." At the November meeting in Iowa City, there were presented two invited addresses. The first was by Prof. W. J. Trjitzinsky, University of Illinois, on the topic: "Singular point problems in the theory of linear differential equations." The second was by Prof. A. H. Copeland, University of Michigan, on the topic: "Fundamental concepts of the theory of probability."

Indianapolis Meeting.—The December meeting at Indianapolis was the regular annual meeting of the Society, and was held in conjunction with the meetings of the American Association for the Advancement of Science, the Mathematical Association of America, the Association for Symbolic Logic, and the Institute of Mathematical Statistics. At this meeting the fourteenth Josiah Willard Gibbs Lecture was given by Prof. Charles A. Kraus, Brown University, on the topic: "The present status of the theory of electrolytes." The series of Gibbs Lectures was, as the name implies, instituted by the American Mathematical Society in honor of the great scientific achievements of Josiah Willard Gibbs, particularly in fields which involved the application of mathematical methods. The lectures are given, on invitation of the Society, by distinguished scientists who have done noteworthy work in such fields.

In addition to the Gibbs lecture an invited address was given by Prof. Alonzo Church, Princeton University, on the subject: "The constructive second number class." Before a joint session of Section A of the American Association for the Advancement of Science, the American Mathematical Society, and the Mathematical Association of America Prof. G. C. Evans of the University of California, retiring vice-president and chairman for Section A, delivered his retiring address on the subject

"Mathematical progress in theoretical economics."

In addition to the longer addresses which have been specifically mentioned, many shorter papers, recapitulating results of researches, were presented by various speakers at the Indianapolis meeting and at other meetings of the Society throughout the year. The total number of such papers was approximately 450.

MATHEMATICAL ASSOCIATION OF AMERICA

Summer Meeting.—The Mathematical Association of America held its summer meeting in September at State College, Penn. in conjunction with the previously reported meeting of the American Mathematical Society. Two sessions were devoted to the presentation of six addresses. In addition to the retiring presidential address of Prof. D. R. Curtiss, Northwestern University, on the subject: "Fashions in mathematics," there were five other invited addresses. The speakers and subjects for these addresses were as follows: Prof. J. F. Ritt, Columbia University, "Integration in finite terms"; Prof. W. L. Ayres, University of Michigan, "Some elementary aspects of topology"; Prof. Orrin Frink, Jr., Pennsylvania State College, "Algebra of logic"; Prof. C. S. Slichter, University of Wisconsin, "The Principia and the modern age"; Prof. H. T. Davis, Northwestern University, "Mathematical adventures in social science."

Annual Meeting.—The Association held its regular annual meeting in December at Indianapolis in conjunction with the other scientific meetings mentioned in connection with the American Mathematical Society. A varied program of addresses was presented with the following speakers and subjects: Prof. T. H. Hilderbrandt, University of Michigan, "Stieltjes integrals"; Prof. D. V. Widder, Harvard University, "The successive iterates of the Stieltjes transform expressed in terms of the elementary functions"; Prof. H. W. Brinkmann, Swarthmore College, "A fundamental problem in the theory of numbers"; Prof. L. L. Dines, Carnegie Institute of Technology, "On convexity"; Prof. H. L. Rietz, University of Iowa, "On a recent advance in statistical inference."

Sectional Meetings.—In addition to these two meetings of the Association as a whole, there were held throughout the country some 21 sectional meetings, the various sections including members residing in one State or in several neighboring States. At these meetings programs of addresses were presented which have been or will be duly reported in the official journal of the Association.

NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

The National Council held its annual meeting in February at Chicago and its summer meeting in June at Detroit. At each of these meetings a varied program of addresses and discussions was held. The subject matter of the programs ranged from broad phases of the significance of mathematics as a factor in education to specific questions involved in the improvement of mathematical instruction.

NATIONAL AND INTERNATIONAL DEVELOPMENTS

Notre Dame Symposium.—There was held in April at the University of Notre Dame a symposium on the calculus of variations, which was attended by some 50 mathematicians from various parts of the country. Since this symposium immediately preceded the spring meeting of the American Mathematical Society in Chicago, it was convenient for visiting mathematicians to be present at both gatherings, a fact which doubtless stimulated attendance at each of them.

At the first session of the symposium Prof. Marston Morse, of the Institute for Advanced Study, presided, and the following papers were presented: by Prof. G. A. Bliss, University of Chicago, "Normality and abnormality in the calculus of variation; by Prof. L. M. Graves, University of Chicago, "The reduction of certain problems in the calculus of variations to the problem of Bolza." At the second session Professor Bliss

presided, and these addresses were given: by Prof. Tibor Radó, of Ohio State University, "The method of variation of the independent variable"; by Dr. W. T. Reid, University of Chicago, "Expansion methods in the calculus of variations"; by Dr. S. B. Myers, University of Michigan, "Certain aspects of differential geometry in the large."

The third session of the symposium was an evening session on April 7, and was devoted to a general lecture by Prof. Solomon Lefschetz, Princeton University, on the topic: "What is topology?" At the fourth session Professor Lefschetz presided, and the following papers were presented: by Prof. Marston Morse. "Abstract variational theory"; by Prof. E. J. McShane, University of Virginia, "Existence theorems in the calculus of variations." At the concluding session Prof. Lincoln La Paz, Ohio State University, presided, and the following program was presented: by Prof. Karl Menger, University of Notre Dame, "Metric methods in the calculus of variations"; by Prof. C. F. Roos, Colorado College, "Applications of the calculus of variations to economics"; by Prof. L. W. Nordheim, "The variation principles in quantum mechanics"; by Prof. A. E. Haas, University of Notre Dame, "The variation principles of Maupertuis and Fresnel, and the relation between wave mechanics and the theory of relativity."

Sectional Meetings at Denver.—At Denver, Col. in connection with the summer meeting of the American Association for the Advancement of Science, there was held on June 24 a joint session of Section A (Mathematics) and Section K (Social and Economic Sciences), at which among others the following papers were presented: by Prof. J. A. Shohat, University of Pennsylvania, "On mechanical quadratures"; by Prof. G. C. Evans, University of California, and Kenneth May, "Stability of regimes of co-operation and competition"; by Prof. E. L. Dodd, University of Texas, "A certain index number as a mean $f(x, y, \ldots, t)$ with $f(c,c, \ldots, c)$ defined only when $c=1$." Immediately following the meeting of the A.A.A.S. the Cowles Commission for Research in Economics conducted its third Annual Conference on economics and statistics at Colorado College from June 28 to July 23.

DESCARTES CONGRESS AT PARIS

At Paris, France, early in August, there was held a Descartes Congress, in honor of the three-hundredth anniversary of the publication of Descartes' "Discourse on Method." Among the delegates appointed by the United States Department of State were the following: Dean G. D. Birkoff, Harvard University, chairman of the delegation; Professor Arnold Dresden, Swarthmore College; Professor L. C. Karpinski, University of Michigan.

GENEVA COLLOQUIUM

At Geneva, Switzerland, there was held in October under the auspices of the University of Geneva a colloquium on the theory of probability, this being one of a series of colloquia (Conférences Internationales) which have been held, for several years, at this University. Among the 23 experts in the theory of probability who delivered addresses were the two American mathematicians, Prof. E. L. Dodd, University of Texas, and Prof. Aurel Wintner, Johns Hopkins University. Professors Dodd and Wintner spoke respectively, on the topics: "Certain coefficients of regression or trend associated with largest likelihood" and "Distribution functions of sums of independent random variables."

MATHEMATICAL RESEARCH

General.—The research activity of American mathematicians continued unabated during 1937, and many important results in all domains of modern mathematics were announced and published. When one takes into account the fact that several thousand pages of mathematical research are published in this country annually and that research articles are necessarily written in such condensed form as to be completely understandable only to those working in the same or related fields, the impossibility of

presenting any sort of complete picture of the advances made during the year in a brief article for the general reader will be readily realized.

In the present section, therefore, no attempt at completeness will be made. There will be an effort, on the other hand, to give the reader some idea of the work in which mathematicians are engaged by means of a sampling process. Certain articles from different fields will be selected for comment, because they are important contributions and also deal with topics whose significance is not too remote from the domain of interest of the reader who is not a specialist in mathematics. It is obvious that with such a principle of choice there is no implication that articles not referred to are of lesser importance than those selected.

Transcendental Numbers.—A number which satisfies an algebraic equation, that is to say the equation obtained by setting a polynomial with integral coefficients equal to zero, is said to be an algebraic number. Examples of such numbers are the integers themselves, rational fractions, such irrationals as $\sqrt{2}$, and more generally any combination of radicals not expressible as a rational fraction. An irrational number that is not the root of any algebraic equation is said to be a transcendental number. The most noteworthy examples of transcendental numbers are π, the ratio of the circumference of a circle to its diameter, and e, the base of the so-called natural or Napierian system of logarithms, first introduced by Napier in the sixteenth century. The question as to whether a number, defined in some specific manner, is transcendental or not, is in general a difficult one to answer. The answer is of importance, however, as it involves deep seated distinctions in the nature of mathematical processes. In a paper in the September number of the *Transactions of the American Mathematical Society* there appeared a paper by Philip Franklin, which provides a significant addition to the class of numbers known to be transcendental. The title of the paper is "A new class of transcendental numbers," and the principal result is that if X and Y are each suitably approximable by sequences of algebraic numbers, then $_{X}Y$ and log X/log Y are transcendental.

Theory of Probability.—The mathematical theory of probability has found a rapidly expanding domain of applicability in recent years. Forming an essential element in any application of mathematics to the social sciences, such as economics, its importance has been increased by the ever-widening use of mathematics in such fields. Moreover, recent advances in physical theory indicate that in regard to the ultra-fine structure of the universe, our knowledge, for the present at least, must be largely a knowledge of probabilities. In an article entitled "Stochastic processes depending on a continuous parameter," which appeared in the July number of the *Transactions of the American Mathematical Society*, J. L. Doob has made an important contribution to the development of probability theory. The methods of the paper are closely linked with recent important developments in other fields of mathematics, and the results are such as should prove useful in the applications.

Topology.—For purposes of convenience of classification, mathematics as a whole is divided into various general fields such as analysis, geometry, algebra, and theory of numbers. The essential unity of the science, however, is continually being exhibited by the fact that theories arising in one of these fields tend, in the course of their development, to become closely linked with theories which have their origin in some of the other fields. A recent interesting illustration of this tendency is found in a paper by Garrett Birkhoff in the January number of the *Annals of Mathematics*, entitled "Moore-Smith convergence in general topology."

The subject of topology which, as a separate branch of mathematics, is of relatively recent development, was essentially geometric in its origin. However, when mathematicians began to extend topological theory from ordinary metric spaces to the more

general conceptions of spaces of functions and spaces of transformations, the close interrelation of the subject with analysis became well established. In the course of this extension it was found that the effort to make the theory as consistent as in the simpler case involved certain difficulties.

In the paper by Birkhoff, referred to above, these difficulties are resolved by the use of a generalized notion of limit due to E. H. Moore and H. L. Smith. The idea of this generalized limit arose logically in connection with the development of E. H. Moore's "General Analysis," a theory originated by Moore for the purpose of unifying a variety of separate theories in the general domain of analysis.

ASTRONOMY

By John E. Merrill

Hunter College of the City of New York

INSTRUMENTAL AIDS

The Schmidt camera is proving itself invaluable to astronomy because of its great speed; exposures on comets, for example, may under favorable circumstances be so short that the star images do not trail perceptibly. The advantage to be gained in the study of change of tail structure of comets is considerable, since in some cases these changes are very rapid. The Schmidt camera has also been applied successfully to the search for novae in the extra-galactic nebulae, and recently by Struve to the photography of spectra of galactic nebulae, in conjunction with a distant wide slit and a small-angle prism.

Automatic guiding of the 60-inch reflector at Mt. Wilson, at least as good as manual guiding, has been achieved by Whitford and Kron. The light of a star of magnitude 8.5 or brighter is divided by a roof-shaped mirror; the two beams, after alternate interruption by a rotating sector, fall on a photoelectric cell, the current from which controls the driving mechanism of the telescope so that the beam of starlight is always exactly halved, and thus keeps the telescope pointed accurately on the selected region of the heavens.

The spectrum of a meteor has been secured with a new rotating spectrograph which effectively "slows up" the meteor in its flight and thus increases the intensity of the light falling on the photographic plate at each point.

Computing and statistical work by the punched-card method can now be carried on for astronomers at the Astronomical Hollerith-Computing Bureau. The work of the Bureau is under the control of a board of managers, the majority of whom are to be appointed by the American Astronomical Society through an Advisory Council. The initial equipment of the Computing Bureau is that which has been used by the Department of Astronomy at Columbia University for the past few years; the International Business Machines Corporation agrees to continue thus on a broader basis its generous support of astronomy. The machines will continue to be housed at Columbia.

THE SUN

Burns reports that three more chemical elements—tantalum, tin and caesium—are to be added to the list of those known to be present in the sun, making a total of 64. Tantalum was earlier listed by Kiess as present, but two of the three lines on which the identification rested were believed by Babcock to be Rowland ghosts, so Mrs. Sitterly classed the element as "doubtfully present." Burns finds the same lines on spectra secured with other equipment and thus establishes their reality. Mrs. Sitterly last year classed tin also as "doubtfully present"; Burns believes

that the doubt existing at that time as to the purity of the iron used for the iron spectrum has been resolved and that tin is clearly indicated in the solar spectrum. Caesium had been expected to appear at most only in the sun-spot spectrum, because of its low ionization potential, but Burns finds a faint line at the predicted position in the spectrum of the disk and a slight strengthening of it in the spot spectrum, on his new plates.

Interesting records of eruptive prominences are being made at the McMath-Hulbert Observatory. On Sept. 17 one portion of a bright prominence photographed in the light of ionized calcium attained an outward velocity of 728 kilometers per second, more than 200 kilometers larger than any velocity ever before recorded for a solar prominence; this same prominence finally went completely out of the "frame" of the motion-picture camera, at a height of 1,000,000 kilometers, also a record.

Richardson finds that Dellinger's belief in a correlation between the occurrence of bright chromospheric eruptions and the fade-out of short-wave radio signals is confirmed by the Mt. Wilson solar records. It appears from his studies that most eruptions producing fade-outs are brighter than the average, but comparison of the spectroheliograms and the photographs taken in the light of the continuous spectrum show no indication of sudden emission of large amounts of radiation corresponding to that of a black-body at a very high temperature. The chromospheric eruptions are found to be on the average practically simultaneous with the radio fade-outs, indicating that the fade-out is a radiational effect rather than the result of inflow of charged particles into our atmosphere. There seems to be no relation between the position of the eruption on the disk and its effectiveness in producing fade-out; this emphasizes the fundamental difference in the manner of production of the radio fade-out and the magnetic storm by solar activity.

The present indications are that the sun-spot maximum will occur early in 1938 and that the spottedness as measured by the conventional numbers will be the greatest since 1870. The Mt. Wilson summary shows that July set an all-time record with a daily average of 13.6 spot-groups. July 11 and July 13 show the highest individual counts, with 23 spot-groups each, also a record for Mt. Wilson. Four groups photographed during the year rank among the 20 largest ever seen in modern times; they were visible on Feb. 1, April 25, July 28, and Oct. 4. The smallest of these groups covered an area of almost 3,000,000,000 square miles of the disk; that of October was the largest ever photographed, covering some 4,360,000,000 square miles.

THE 1937 ECLIPSE

Every party which journeyed to the path of totality to view the eclipse of the sun on June 8 was rewarded with good weather. As the track passed over but little land, the National Geographic-United States Navy party occupied tiny Canton Island near the western end of the track and the Hayden Planetarium-Grace Line Expedition made its observations in Peru at the eastern end. The third American group, the Princeton University-Franklin Institute-Cook Observatory party, saw the eclipse from the deck of the Isthmian Line freighter *Steelmaker* in mid-Pacific near the noon point.

Complete and precise scientific results of the eclipse observations will not be published for some time, but certain general statements can be made. The corona was of about the same total brightness as the full moon, that is to say fainter by a factor of 100 than the Harvard expedition in 1937 found it to be. The coronal streamers were visually sharper than usual, according to the published drawings; the general form was that associated with sun-spot maximum. Photographs by de Romana through polaroid indicate that the coronal material is radially polarized; two photographs by Stevens, taken from an airplane, have been interpreted by Menzel as show-

ing the existence of a globular corona about the sun, with at least the lower portions of the streamers embedded in it. Color film was extensively used and several beautiful pictures resulted. Stewart and Stokley, who can now claim to have viewed one total eclipse for longer than any other astronomers in history, believe that scientifically valuable programs of eclipse observation can be carried out on board ship.

MERCURY

Paraskevopoulos reports that his observations of the "grazing transit" of Mercury on May 11 revealed no luminous ring about the planet. It should therefore be considered certain that Mercury has no appreciable atmosphere, since a twilight arc should have been observable all the way around the planet just before and just after the grazing contact and also, during the contact, on that limb of the planet which did not encroach on the solar disk, if there were sufficient atmosphere to produce the arc.

THE MOON

Jones and Jeffreys independently present evidence that refinement in the determination of the positions of the perigee and the node of the moon's orbit, yields a change in the computed figure of the moon. Whereas the moon has been supposed to have a diameter about one mile greater along the direction toward the earth, it appears probable that the ellipticity of the visible disk is very slightly greater than that measured in either of the other two planes of reference, and therefore that the mean surface of the moon is, within a small fraction of a mile, truly spherical.

MARS

Slipher's photographic observations of Mars show that on May 20 and 21 the opacity of part of the Martian atmosphere to blue light was very much less than usual. It is well known that very much less surface detail is shown on the photographs in blue light, ordinarily, than on those taken in yellow, because of the much greater scattering of the blue within the atmosphere. On the two dates mentioned, however, the atmosphere over the northern and central part of the disk of Mars offered so little obstruction to the passage of blue that the "blue" photographs closely resemble the usual "yellow" ones, but only over part of the disk. The "blue" plates show their usual lack of surface detail on the southern portions, and the "yellow" and "red" plates are in no way appreciably different from usual. Slipher decides that the Martian atmosphere contains a great deal of exceedingly fine dust, of a size that will scatter strongly light of the short wave-lengths, and regards these observations of last May as evidence that the dust-cloud may, very infrequently, settle or clear away, over restricted regions. This veiling by the atmosphere Slipher extends, in a paper presented at the December meetings of the American Astronomical Society, to the case of Venus as well. He believes that the extreme upper atmosphere of Jupiter, that which overlies the visible clouds, is not a veiling atmosphere, because the cloud-detail photographed in blue light near the center of the disk is carried around the limb by rotation without blurring.

Adams and Dunham report that they are unable to find any evidence whatever of lines due to water-vapor in the atmosphere of Mars, in spectra they secured in February and April with a new diffraction grating ruled by Wood on an aluminum surface. In February the distance between planet and earth was decreasing about 19 kilometers per second, so that water-vapor lines of Martian origin should have been displaced so far to the violet in the spectrum as to be clear of the corresponding strong telluric ones; in April blending would have produced asymmetry of the telluric lines. They conclude, confirming their work of a few years ago, that there is much less than five per cent as much water-vapor in the Martian atmosphere as in ours, above the same surface area.

JUPITER AND SATURN

Wildt, from a study of planetary atmospheres from the photochemical standpoint, shows that, since an abundance of hydrogen has probably always been available in the atmospheres of the more massive planets, the stability of methane alone of the hydrocarbons would be expected. This agrees with observation, as it had been the only hydrocarbon observed spectroscopically in the atmosphere of Jupiter and Saturn. He shows also that if hydrogen and methane are both present, they tend to stabilize ammonia in the atmosphere, causing secondary photochemical reactions which rebuild the ammonia as it is torn down; this probably accounts for the large amount of ammonia observed on Jupiter. In a later paper Wildt shows, further, that the atmosphere of Jupiter, that is to say the gaseous envelope surrounding an invisible solid body, is very shallow, extending downward from the cloud-surface seen not more than 100 kilometers. The central core he shows to be not degenerate though under great pressure.

NEW ASTEROID

The most noteworthy asteroid, by far, for the year was the one first observed by Reinmuth on Oct. 28 as a tenth magnitude object with an hourly motion against the star background, of two-thirds the apparent diameter of our moon. This angular motion was so high that, by the time the American observatories could begin photographing the object, it was necessary to extrapolate its position, with the consequent delays in locating it. Still worse, though the trail was obvious on Reinmuth's discovery plate, it was of course not possible to state in which of the two directions the body moved to produce the trail; therefore search had to be made over two large areas. Clouds prevented an immediate attack in several places, but positions were obtained as soon as could be in the face of all these difficulties. The first preliminary orbit computed on the basis of the very meager data so far obtained shows that this asteroid must have passed within much less than 1,000,000 miles of the earth on Oct. 30, the very closest approach of an asteroid to the earth ever known. On the date of writing, an improved preliminary orbit by Cunningham has appeared showing that perihelion passage occurred on Dec. 18 and that the asteroid may be recovered west of the sun in the early part of January as an eighteenth-magnitude object.

METEORITIC MATTER

Whipple reported in December that six meteors had been observed photographically at both the Cambridge and Oak Ridge stations of the Harvard Observatory. The exposures were long and the Oak Ridge camera was equipped with a rotating sector which interrupted the trails 20 times a second. The meteors which had been identified as members of showers yielded periods in agreement with the known periods of the respective showers; the sporadic meteors showed velocities which, when corrected for the earth's motion at the instant of flight, came well within the range of velocities for solar-system meteors.

H. P. Robertson has investigated mathematically the question of the existence of a tangential retardation of small particles moving around the sun, absorbing the solar radiation that falls on them and re-emitting it isotropically. He finds that such a tangential drag does exist and may be cosmogonically important. A particle one centimeter in radius, with a density equal to the earth's mean density and travelling in an orbit the size of the earth's, would, by the loss of angular momentum due to this drag, describe a spiral about the sun and be swept into it in 40,000,000 years; for a particle of such size and mass that radiation pressure almost balances gravitation, the time of infall from the earth's distance could be as short as 1,000 years, or less.

COMETS

Three periodic comets, whose returns in 1937 were expected, put in their appearances: Grigg-Skjellerup,

Schwassmann-Wachmann, and Encke, as comets 1937d, e and h respectively; comets Tuttle-Giacobini and Gale have not been found.

Comet Daniel 1909 was rediscovered early in the year through the work of Hirose of Tokyo. This comet passed perihelion 1909 Dec. 1 or a day or two earlier, and various investigators deduced a period of 6.48 years on the basis of computed orbits representing satisfactorily the 1909 observations. The comet was not found at any one of the next three returns, but Hirose noticed that the six-and-one-half-year period implied a more favorable position for observation at the return predicted for 1935–36 and recomputed the orbit from the places at the apparition observed. He found a slightly larger orbit with a period of 6.83 years and predicted the 1936–37 places so accurately on this basis that Simizu located the body as a thirteenth-magnitude object almost at once.

Four "new" (that is to say, unpredicted) comets were discovered during the year, 1937b by Whipple, 1937c by Wilk and Peltier independently, 1937g by Hubble, and 1937f by Finsler.

Finsler's comet was discovered at Zurich on the morning of July 4 while he was "sweeping" the sky with field-glasses. It was an easy naked-eye object for more than a month, and especially easy for the layman to locate because its apparent path among the stars was southeastward across the Big Dipper and close by Arcturus. The comet developed a tail showing considerable structure and rapid changes of structure; though not a striking display in field-glass or small telescope, this tail photographically covered fully 20° of arc at its best, about Aug. 10, corresponding to a length of about 17,000,000 miles. This is the second comet Finsler has discovered.

THE STARS

Milne reverses the usual procedure in the problem of stellar structure by fitting outer layers, of observable characteristics, onto an interior completely unspecified except for the assumption that it is in mechanical equilibrium. He obtains a formula which represents with a fair degree of approximation the general features of the observed relation between mass and luminosity of a star. Such analysis helps to set out more clearly those internal properties which are really *sine que nons* of the observed surface conditions.

Von Weizacker, assuming that a star begins its life as a mass of pure hydrogen, shows that the central temperature must rise, under gravitational contraction of the star, to about 100,000,000° to make likely the production of a single neutron by encounter between a proton and an electron. The number of neutrons produced then increases very rapidly and the star undergoes an almost explosive expansion followed by a period of slow steady expansion, to make its rate of energy-liberation equal to that of its radiation into space. Proton capture begins and nuclei of low atomic weight are built up. Part of these break down at once in such a way that they act as catalysts for the formation of α-particles, ionized helium; the principal source of stellar energy lies in liberations at this last-named step. The state of a star is on this theory found to be determined by its mass and its hydrogen content.

Van de Kamp and Vyssotsky have completed an exhaustive study of the proper motions of 18,000 stars derived at Leander McCormick Observatory. They have derived mean parallaxes from these stars subdivided first into five magnitude groups (the magnitudes range from $7^{m}.5$ to about 13^{m}) and into four zones of galactic latitude, and second into seven spectral-type groups with the same zones of galactic latitude. Both arrangements of the computed quantities show that a minimum parallax is reached in the zone $\pm 11°$ to $\pm 20°$. The cause of this anomally is not yet satisfactorily determined.

Joy has published a table of radial velocities for 128 Cepheid variables. For the great majority he finds that a simple curve, similar to the well-known one for δ Cephei, will repre-

sent the observed velocities satisfactorily. He sees no evidence of conformity of the shape of the velocity curves to any set rules, except that, as is well known, they are more or less closely mirror-images of the corresponding light-curves; a marked correlation between velocity range and length of period is displayed. On the average the minimum of velocity lags behind the maximum of light by 7% of the period, with an increase in the percentage of lag evident in the longer periods.

Luyten has completed his survey of the proper motions of the stars of the southern hemisphere and publishes a table concerning the 29 new cases of proper motion in excess of 0″.5 per year. Since for nearby stars the annual proper motion will in general be several times as great as the parallax and since the proper motion effect is cumulative over the interval between the plates used, the fact that Luyten found only 29 cases as above indicates that, at least for the southern hemisphere, the list of our very nearest stellar neighbors must be essentially complete. The outstanding object of Luyten's list has a proper motion of 3″.27 per year; the provisional parallax of 0″.53 indicates that this must be intrinsically one of the very faintest stars known.

Zwicky has discovered three supernovae in extra-galactic nebulae in his Schmidt-camera patrol. Two of these were at maximum light three to ten times as bright as the nebulae in which they blazed forth; their absolute magnitudes were —15 or —16, corresponding to 100,000,000 times the sun's luminosity.

Williams finds that the displacements of the absorption lines in the spectrum of Nova Herculis 1934 during the "first phase" extending from discovery to light-maximum, can best be accounted for by the following assumptions: (a) Matter is ejected continuously from the central star through a photosphere radiating like a black-body at a temperature of 11,000°K. (b) The velocity of ejection, initially about 800 kilometers per second for hydrogen, decreases to about 170 kilometers per second during this first phase. (c) After ejection the velocity of any atom remains constant.

Baade and Minkowski have discovered a cluster of some 130 faint stars, many of them variable, in the region of the Trapezium of Orion, and apparently embedded in the nebulosity spread throughout that space. They suggest that radiation pressure of the hot blue stars of the Trapezium has cleared from their immediate neighborhood the most finely divided absorbing matter, leaving a sort of window through which the infra-red radiation can reach us from the central members of a much larger cluster mostly concealed within the outer reaches of the Great Nebula.

A study by Adams, Sanford and Wilson makes of β Capricorni an entirely new class of stellar system, a "spectroscopic triple." It has been known as a binary with a period of 1,375 days; now further study of the AO-type secondary component reveals it as also a spectroscopic binary, with a period of 8⅔ days. The minimum masses for the three stars are 6, 4 and 1 times the sun's mass, with the primary the star of mass 6. A forty-foot separation of the mirrors of the big Mt. Wilson stellar interferometer failed to reveal the slightest evidence even of duplicity of the system.

INTERSTELLAR MATTER

Merrill and Sanford show that the displacements measured for the detached lines D_1 and D_2 of sodium agree with those for H and K of ionized calcium in the same stars (of type B3 and earlier) except for a slight tendency for the sodium values to be higher. The comparison of the displacements in later-type spectra brings to light the blending of interstellar and stellar calcium lines in types as late as A2. These two workers, with Wilson, conclude from the intensities, widths and displacements of the interstellar D lines and K line, that sodium and calcium occur in clouds in space. For sodium the clouds may be considered for

convenience as of the order of 2,000 light-years in diameter, distributed through the observable region sufficiently well so that no strong regional effects are noticed, but having random cloud velocities with a dispersion of perhaps 20 kilometers per second. The average density of these clouds is about three sodium atoms per 1,000 cubic meters. The clouds partake of the galactic rotation, but no increase of line-intensity towards the galactic center is evident. The behavior of the ionized calcium as deduced from the interstellar K line is about the same.

Dunham, using a Wood grating ruled on aluminum, has detected the presence of neutral potassium by observation of two interstellar lines, at λ 7699.03 and λ 7664.94, and of neutral calcium by a very sharp line at λ 4226.73. Three other lines detected in the violet are possibly interstellar, being also sharp, but their chemical origin is not clear.

A complete catalog of the 400 stars in which interstellar lines have so far been measured at Mt. Wilson was published by the Mt. Wilson workers, with all the data concerning the lines.

Beals announces that a line or more probably a band at λ 4430.5 appears to be interstellar, showing nearly constant velocity in the spectra of 46 stars of low and high velocities, and correlating well with the interstellar K line.

Henyey has discussed the general theory of the illumination of reflection nebulae and presented a series of curves for the distribution of brightness on the surfaces of idealized nebulae; he shows that the position of the illuminating star relative to the nebula is deducible from the intensity gradient of the reflected light, measured from the center of the nebula outward.

Struve extends the Lommel-Seeliger theory of diffuse reflection to the case of an opaque spherical nebula consisting of particles characterized by different albedos and phase functions. He then shows that, under the reasonable assumption that the nebular absorption coefficient is much larger for the incident radiation than for the diffuse nebular light, luminous rims may be produced on dark nebulae, in accordance with observation.

Shapley reports that the Harvard star-counts reveal a cloud of absorbing matter only three degrees from the North Polar Sequence. The Sequence has been believed to be affected by absorption because of negative color indices derived for AO stars in other parts of the sky after standardization by the Sequence. The newly-discovered obscuration is in galactic latitude 30° and produces an absorption of about one-half magnitude throughout a field of 2° diameter.

THE GALAXY

Berman has analyzed the radial velocities of the planetary nebulae by grouping these objects according to distance on the assumption that the real linear diameters of planetaries are statistically alike. The strong concentration of light in emission lines in the green makes the planetary nebulae ideal for such a study because the spectra of far more distant ones can be photographed than is the case with equally bright objects having ordinary stellar absorption spectra. For the planetary nebulae lying between 15,000 and 40,000 light-years distant, Berman's curves imply that the center of the galaxy is at galactic longitude 333° and 30,000 light-years from us, with the sun's orbital period about it 210,000,000 years. The total mass of our galaxy comes out as 2.3×10^{11} times the sun's mass and the thickness of the absorbing layer in the galactic plane about 1,300 light-years.

EXTRA-GALACTIC NEBULAE

McVittie interprets Hubble's material on nebular counts and redshifts as indicating that space is of very large radius of curvature, about 5,000,000,000 light-years. McVittie believes that the evidence is in favor of space being hyperbolic, but that spherical space is just within the limits allowed by the probable errors

involved in the observational formulae, provided the mean mass of a nebula is taken at Smith's estimate of last year. He finds the mean density of matter in the universe to be 10^{-28} or 10^{-30} grams per cubic centimeter according as the mass of the average nebula is taken at Smith's figure or one a hundred times lower.

Stebbins and Whitford find that the 112 extra-galactic nebulae whose colors they have determined (referred to the color-scale of dwarf stars) show a small color-excess ($0^m.14$) which may be due to selective absorption within the nebulae themselves. They find no evidence of selective absorption in intergalactic space. From the colors of nebulae, globular clusters and B-stars together they adduce evidence that the sun is immersed in a non-selectively absorbing layer near the galactic plane and that selectivly absorbing clouds are also near that plane in all directions from us but not in our immediate neighborhood.

Tombaugh announces the discovery of a cloud of some 1,800 extra-galactic nebulae of about fifteenth apparent magnitude.. He describes the cloud as a stratum extending from Perseus in a long arc to Andromeda. The cloud of nebulae discovered by Zwicky independently is one part of this great stratum.

Shapley announces the discovery of by far the greatest aggregation of extra-galactic nebulae so far known. The Harvard Survey has revealed a cloud extending over a region 40° long and 15° wide, from near the south celestial pole towards the south galactic pole; between 10,000 and 15,000 of the nebulae, between the magnitudes of 16.5 and 18.5, are discernible on the plates. Since 18.5 magnitude is by no means the lower limit of brightness photographable at the South Africa station, and since the nebulae observed cover a range of two magnitudes, Shapley believes that the entire cloud may well contain 40,000 to 50,000 nebulae.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Astronomical Society, University Observatory, Princeton, N.J.

American Mathematical Society, 501 East 116th Street, New York City.

Mathematical Assn. of America, 33 Peters Hall, Oberlin, O.

National Academy of Sciences, 2101 Constitution Ave., N.W., Washington, D.C.

Science Service, 2101 Constitution Ave., N.W., Washington, D.C.

DIVISION XIX
ENGINEERING AND CONSTRUCTION

STRUCTURAL ENGINEERING

By Whitney C. Huntington

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GENERAL

The year 1937 started with encouraging indications of marked improvement in the volume of engineering works and conditions continued to be favorable during the first half of the year. However, the "recession" which was felt in all business activities had its effect in slowing up construction activity during the last half. In spite of this condition, the year was notable in many respects. Construction continued on the earth dam and on the concrete dam which will have the largest volumes of these materials of any dams yet built; work started on a dam which is to be second only to Boulder Dam in height, and upon a water tunnel which is to be 85 miles long or several times as long as its nearest rival; and the longest span bridge in the world was opened to traffic. A relatively new type of structure is pushing its way into the skyscraper class with the rapidly increasing height of radio towers. Work is underway on a structure which will be 130 feet higher than the Empire State Building which is now the tallest structure in the world by a wide margin.

GRAND COULEE DAM

By Congressional appropriations which were made during the year, the completion of Grand Coulee Dam as described in The American Year Book, 1936, p. 627, has been assured. The original appropriation was made by President Roosevelt from relief funds and if the project had not been approved later by Congress it might have suffered the same fate as the Florida Ship Canal and the Passamaquoddy tidal power project which were inaugurated in the same way. This project is located on the Columbia River 600 miles from its mouth and 92 miles by highway west of Spokane, Wash. The major feature is a dam which is to be 553 feet high and 4,200 feet long with a volume of 10,300,000 cu. yd. of concrete or about three and one-half times that of Boulder Dam, the largest masonry dam in the world. However, the 727 feet height of the Boulder Dam will exceed that of Grand Coulee by 177 feet, so Boulder Dam will still maintain its position as the highest dam in the world by a wide margin. The total cost of the project, including the dam, power plant, reservoir in the Grand Coulee above the dam and the irrigation system for the 1,200,000-acre tract, is estimated at nearly $400,000,000. It is not planned to complete the ultimate development of this project in the near future.

Work on the initial contract, which included the lower 177 feet of the dam, was scheduled for completion in January, 1938. Bids for the remainder of the dam and a power plant on the west bank of the river to raise water into the reservoir in the Grand Coulee, were opened in December, 1937. Included in this contract are nine generators each with a capacity of 105,000 kilowatts. A power house on

the east bank of the river is contemplated for the future when needed.

At times, the number of men working on this project has reached 7,000 and the monthly payroll has totalled over $1,000,000. The quantity of concrete placed in a single day has reached 14,000 cubic yards. The construction progress has been so rapid that it is over a year ahead of schedule. This project was designed by the U. S. Bureau of Reclamation and is being constructed under its supervision.

BOULDER DAM

Since its dedication Sept. 30, 1935, as noted in THE AMERICAN YEAR BOOK, 1936, p. 626, Boulder Dam on the Colorado River between Arizona and Nevada has continued to hold the interest of the public through visits of thousands to the site of the dam and through the press. At the close of the year, Lake Mead, the reservoir created by the dam, was over half full, electrical energy was being generated, and the river below the dam was so regulated that floods and water shortages in the areas served by this project were things of the past. In addition to these important contributions to the welfare of that region, Lake Mead is proving to be an important recreational and scenic feature of an area which is devoid of natural bodies of water. Because of the permanent staff necessary for the operation of the project and the facilities required to take care of tourists, Boulder City, Nev. which adjoins the dam, has become a thriving municipality controlled by the Federal Government. The temporary housing provided for the construction laborers has been removed.

Before the reservoir started to fill, the U. S. Coast and Geodetic Survey, at the request of the U. S. Bureau of Reclamation, ran 700 miles of precise levels and established benchmarks to measure the anticipated settlement of the region due to the 36,000,000,000 tons of water to be stored along the 115-mile length of Lake Mead. That this settlement is taking place is indicated by the frequent earthquakes which are occurring as the reservoir fills. These have averaged about five a month but in April, 1937 there were 18, with eight of these occurring in two days, and in June there were 13. The statement is made that: "Sounds like explosions or blasts have accompanied the quakes," but it is also stated that the quakes do not cause earth movements which can be measured. There are indications that a natural lake existed at one time at the site of Lake Mead, and the suggestion has been made "that the area may now be readjusting itself to a condition of loading that obtained previously." This phenomenon has aroused considerable interest since it is occurring in a region which has not hitherto experienced earthquakes but there is no concern about the safety of the dam for the possibility of earthquakes and earth movements due to the water load were taken into consideration in the design of the dam.

In establishing the rates for electric power provided at Boulder Dam, no part of the cost of the project was charged to flood control and navigation as in the case of some of the more recent projects, such as Bonneville, T.V.A., and Grand Coulee. The Los Angeles Bureau of Power and Light and the Metropolitan Water District, which are heavy purchasers of power from this project have requested that the rates be adjusted to conform to the present financing policies of the Federal Government. It is claimed that otherwise southern California will be at a disadvantage, in comparison with the northwest, in attracting new industries because of the cheaper power from the Bonneville plant.

The U. S. Bureau of Reclamation designed this structure, supervised its construction, and is responsible for its operation.

FORT PECK DAM

At the close of the year more than three-quarters of the 100,000,000 cubic yards of earth-fill required to complete this structure, as described in THE AMERICAN YEAR BOOK, 1936, p. 629, has been placed. This dam,

which is of the hydraulic earth-fill type, is 242 feet high and has a volume greater than any other dam in the world. The volume of earth in this structure is 10 times that of the concrete in Grand Coulee Dam, 35 times that of Boulder Dam, and about equal to the estimated volume of the Great Wall of China which consists of stone masonry facing walls with earth-fill between them.

Until June 24, 1937 the dam was divided into two parts by the river but on that day the river was diverted into four concrete and steel-lined tunnels 25 feet in diameter through the bluffs on the east side of the valley by dumping rock and gravel across the channel which had been provided through the dam to carry the river while the tunnels were being constructed. The central portion of the dam has now been filled in to correspond with the remainder of the dam.

The dam is located on the upper reaches of the Missouri River at Fort Peck, Mont. near Glasgow. It is primarily for flood control but it will store water which will be used for irrigation and to increase the minimum flow of the river so as to extend navigation with a minimum depth of nine feet as far up as Sioux City, Ia. The reservoir will have a capacity of 20,000,000 acre-feet and a length of 180 miles. The army engineers have recommended that no power generation facilities be installed at present because there is no market for the power. However, a market may develop in the future so it is recommended that provision be made for the ultimate installation of generators with a capacity of 105,000 kilowatts. The total cost of the project is estimated as $83,000,000. The designs were prepared by the Corps of Engineers of the U. S. Army and the work is being carried on under its direction.

BONNEVILLE DAM

On Sept. 28 President Roosevelt started the first generator on this project which will have an ultimate capacity of about 600,000 horse power. This will be supplied by 10 units each with a capacity of 60,000 horse power. The Kaplan turbines which operate the generators are the largest turbines yet built in the United States and the largest of this type ever built. As noted in THE AMERICAN YEAR BOOK, 1936, p. 628, this project consists of an overflow concrete dam and a run-of-the-river power plant located on the Columbia River about 40 miles east of Portland, Ore. It was designed by the Corps of Engineers of the U. S. Army and is being constructed under its direction. The dam and power plant will be operated by the Army Engineers but the administration of the transmission and marketing of the power generated at the dam will be in the hands of a civilian administrator. The project is scheduled for completion during 1938.

ALCOVA AND SEMINOE DAMS

As noted in THE AMERICAN YEAR BOOK, 1936, p. 638, these dams are being constructed on the North Platte River southeast of Casper, Wyo., as a part of the Casper-Alcova irrigation project. This project has been renamed the Kendrick project in honor of the late Senator John B. Kendrick of Wyoming. Alcova Dam, which is practically completed, is a rolled-fill, earth dam about 230 feet high constructed primarily to divert water from the North Platte River into the 59-mile Casper Canal, now under construction, which extends to a point near Casper where 35,000 acres will be irrigated. The reservoir created by this dam will have a storage capacity of 160,000 acre-feet.

Seminoe Dam is of the concrete arch type 261 feet high with a constant upstream radius of 290 feet and a crest length of 560 feet. The reservoir created by the dam will have a storage capacity of 1,020,000 acre-feet. A power plant which is expected to produce 130,000,000 kilowatt hours of firm power annually is included in the project. A cooling system consisting of one-inch pipes spaced about five feet apart horizontally and vertically is provided to cool the concrete during construction and thereby hasten the shrinkage of

the concrete and reduce the amount of cracking. The cooling will be effected by circulating river water through the pipes embedded in the concrete. Due to the lower temperatures of the river water and of the air at this dam refrigerated water will not be required as was the case in the second stage of cooling at Boulder Dam. On Aug. 10, the river was diverted into the 27-foot diversion tunnel in the rock of the east abutment. The progress schedule calls for the placing of the mass concrete in the dam to begin in March, 1938, and to be completed in June, 1939. This project was designed by the U. S. Reclamation Bureau and is being constructed under its direction.

PARKER DAM

This dam is a concrete-arch structure 320 feet high, with a volume of 270,000 cubic yards, being constructed across the Colorado River 155 miles below Boulder Dam to divert water into the intake of the Colorado River Aqueduct to supply the Metropolitan Water District of southern California which includes Los Angeles and the adjoining municipalities. A description of this project is given in The American Year Book, 1936, p. 628. The dam is unique in that it is to project only 85 feet above the streambed but, to secure satisfactory foundations, it was necessary to extend the dam 235 feet below the streambed, thus making its foundations deeper than those of any other dam yet constructed. During construction, the river is diverted through two 29-foot concrete-lined tunnels in the Arizona abutment which will be of no further use when the dam is completed and will, therefore, be sealed with concrete plugs after this structure is completed. Excavation for the foundations started in October, 1936 and reached bedrock in July, 1937. The dam should be completed early in 1938. This project was designed by the U. S. Reclamation Bureau and is being constructed under its direction for the Metropolitan Water District of southern California.

SAN GABRIEL DAM NO. 1

This structure is a rock-fill dam with a height of 355 feet, a crest length of 1,670 feet, a base width of 2,000 feet, a volume of 10,572,000 cubic yards, and is the highest rock-fill dam in the world. It was completed in July, at a cost of about $17,000,000 by the Los Angeles County Flood Control District. This dam takes the place of a concrete gravity-section dam planned to be over 500 feet high on which construction was started at a site about three miles above the present site but which was abandoned because of poor foundations after a large sum had been expended in excavation. The original plans for the present dam called for a fill of large rock to be obtained from a quarry located nearby but the rock in this quarry was found to be unsuitable for use without excessive waste. Work was discontinued after 500,000 cubic yards of rock had been placed and the design was changed to one with flatter slopes to permit the use of quarry-run material. After construction was again started, rock was placed in record-breaking time, an average of nearly 500,000 cubic yards per month being maintained until the dam was completed, the maximum monthly record being nearly 1,000,000 cubic yards.

SHASTA (KENNETT) DAM

Work at the site of this dam, which is considered the key to the Central Valley Project in California, as described in The American Year Book, 1935, p. 635, was underway at the close of the year. This dam with its height of 560 feet will be the highest gravity-section dam in the world. Its length is to be 3,100 feet and its volume 5,700,000 cubic yards or about one-half that of Grand Coulee Dam. The reservoir created by the dam will have a storage capacity of 4,500,000 acre-feet and there will be an initial power installation of 280,000 kilowatts with provision for an ultimate capacity of 350,000 kilowatts. The dam is located on the headwaters of the Sacramento River 13 miles north of Redding, Calif. This project

is being carried out under the direction of the U. S. Reclamation Bureau.

FRIANT DAM

This structure is also an important feature in the Central Valley Project described in THE AMERICAN YEAR BOOK, 1935, p. 624 and 1936, p. 635. It is to be a concrete gravity-section dam 250 feet high and 3,380 feet long and will create a reservoir with a storage capacity of 450,000 acre-feet. No power is to be generated. Friant Dam is located on the headwaters of the San Joaquin River near Fresno, Calif. Work has started at the site of this dam which is being constructed by the U. S. Reclamation Bureau.

KINGSLEY (KEYSTONE) DAM

Funds have been alloted by P.W.A. to construct a dam across the North Platte River near Keystone, Neb. by the Central Nebraska Public Power and Irrigation District. This dam is being constructed to store water for use in irrigation and in generating electric power at hydroelectric plants located at some distance below the dam. It is to be a hydraulic earth-fill structure 160 feet high and 10,000 feet long, supplemented by an earth dyke 30 feet high and 5,800 feet long, which will be second in size only to Fort Peck Dam. The P.W.A. allotment which was made in August included a grant of about $9,000,000 at a loan of about $11,000,000, making a total of about $20,000,000. Work was begun on this project in 1935 with $10,000,000 allotment which is being used for the construction of irrigation canals and for the initial construction of the dam.

TENNESSEE VALLEY DAMS

A description of the dams which are being constructed by the Tennessee Valley Authority is given in THE AMERICAN YEAR BOOK, 1936, p. 630. Norris Dam, which was completed in July 1936, was the first dam to be constructed under the T.V.A. The second to be completed was Wheeler Dam which was dedicated Sept. 10, 1937, but was completed earlier in the year at a cost of $37,000,000. It has an initial hydroelectric generating capacity of 45,000 horse power and extends navigation on the Tennessee River 74 miles upstream to Guntersville Dam which is now under construction. Other dams which are under construction by the authority are Pickwick Landing, Hiwassee, and Chickamauga. Dams which are included in the general plan recommended for the development of the valley but which have not yet been authorized are Watts Bar, Coulter Shoals, and Gilbertsville.

The President has proposed the creation of six more regional authorities similar to the Tennessee Valley Authority. This proposal will probably be acted upon by Congress during 1938.

UPPER MISSISSIPPI RIVER LOCKS AND DAMS

This project, consisting of the construction of locks and dams at 26 points along the Mississippi River between St. Louis and Minneapolis to provide a navigable channel of nine feet between Minneapolis and the Gulf of Mexico was described in THE AMERICAN YEAR BOOK, 1936, p. 629. Construction has continued on this project with most of the structures completed or nearing completion. The project is being carried on by the Corps of Engineers of the U. S. Army at a total estimated cost of $147,217,000 and 1939 as a scheduled completion date.

OHIO VALLEY FLOOD CONTROL DAMS

Construction started in September on the Crooked Creek Dam near Ford City, Penn. which is the first of eight dams that are to be erected for flood control in the upper Ohio basin at an estimated cost of $50,000,000. This is to be an earth-fill dam about 1,800 feet long and is scheduled for completion in 1940 by the Corps of Engineers of the U. S. Army.

The legality of the authorization of the construction of the Bluestone Dam on the New River above Hinton, West Virginia, has been attacked by the West Virginia Power Com-

pany but no decision had been rendered at the close of the year. The estimated cost of the proposed dam is $13,000,000.

All of the 14 dams constructed in the Muskingum Valley, Ohio for flood control as described in THE AMERICAN YEAR BOOK, 1935 and 1936, have been completed, the total expenditure on the project being $44,000,000.

GOLDEN GATE BRIDGE

An epoch of long-span bridge building was brought to a climax by the opening of the Golden Gate Bridge at San Francisco on May 27. This bridge, which has been discussed in THE AMERICAN YEAR BOOK, 1933 to 1936 inclusive, has a main span of 4,200 feet and approach spans each of 1,125 feet. Its towers with their height of 746 feet are the tallest structures in the country, exclusive of the skyscrapers of New York City. A 60-foot roadway and two 11-foot sidewalks are suspended from two cables 36½ inches in diameter. The cost of the bridge was about $35,000,000.

The traffic over the bridge during the early summer months of 1937 was good but because of the decreased traffic following the close of the vacation period and of the reduction of fares by the competing ferries, a serious financial situation has developed. In an attempt to remedy this condition, the bridge district has appealed to the California Railroad Commission for a rehearing on its order which permitted the ferries to reduce their passenger fares. Also the truck tolls charged on the bridge were reduced to 50 cents in an effort to attract more traffic. At its peak, the traffic over the bridge reached nearly 100,000 vehicles per week, but a sharp drop of 25 per cent occurred when the ferries reduced their fares.

SAN FRANCISCO-OAKLAND BRIDGE

As noted in THE AMERICAN YEAR BOOK, 1936, p. 632, this great structure was opened to traffic Nov. 12, 1936. During its first year, over 9,000,000 vehicles, carrying over 20,000,000 passengers, crossed the bridge and produced a revenue of more than $5,000,000 which is greater than that from any other bridge in the world. It is the most costly bridge ever built and from the point of view of the volume of traffic carried, it ranks third among the bridges of the world. During the year, work started on the installation of rapid-transit facilities over the bridge at an estimated cost of $18,000,000, including the track and overhead facilities, the terminals and other items required by the project.

CHICAGO OUTER-DRIVE BRIDGE

The Outerlink Bridge on the thirty-mile Chicago Outer Drive system along the shores of Lake Michigan was dedicated by President Roosevelt on Oct. 5. This structure, which was built at a cost of $6,574,000, is a double-leaf bascule bridge with a clear span of 220 feet, and a span center to center of trunnions of 264 feet which provides for eight traffic lanes and two 14-foot sidewalks. Provision is made for a lower deck when the traffic requires this additional capacity.

BATON ROUGE BRIDGE

Construction started in August on this bridge which is to cross the Mississippi River at Baton Rouge, La. The length of the main bridge is 3,326 feet and of the approaches 8,900 feet, making a total length of 12,226 feet. Included in the length are two cantilever spans of 848 feet each. A single-track railroad and two 18-foot highways are provided for. The total cost of the project is estimated at about $9,000,000 and it is to be completed sometime in 1939.

WHITESTONE BRIDGE

Construction has started on the Bronx-Whitestone Bridge across the East River five miles upstream from the Triborough Bridge in New York City. The main bridge is a suspension structure with a central span of 2,300 feet and side spans of 735 feet. Long viaduct approaches are required. Provision is made in the design for four lanes of highway traffic. The

cost is estimated at $18,000,000. A decade ago, this would have been a record-breaking span, the longest span suspension bridge then in existence being the Delaware River Bridge at Philadelphia with its 1,750-foot span and the longest span bridge of any type being the Quebec Bridge which crosses the St. Lawrence River with a span of 1,800 feet. Since then the 1,850-foot Ambassador Bridge at Detroit, the 2,310-foot suspension spans of the San Francisco–Oakland Bay Bridge, the 3,500-foot span George Washington Bridge, and the 4,200-foot Golden Gate Bridge, all of the suspension type, have been completed.

MARINE PARK BRIDGE

This bridge, which was under construction during 1937, is notable for the 540-foot lift span which is the central span of the 13-span structure having a length of over 3,600 feet. The structure crosses the Rockaway Inlet to connect Brooklyn and Queens in New York City. This is the longest highway lift span ever constructed and is only four feet shorter than the railroad span across the Cape Cod Canal at Buzzards Bay, which is the longest lift span in the world.

NECHES RIVER BRIDGE

This bridge is being built over the Neches River and the bordering salt marsh near Port Arthur, Tex. It is 7,700 feet long and provides a 176-foot vertical clearance under the center span which is a 680-foot cantilever. Flanking the main span are 374-foot through truss anchor spans and deck girder and concrete slab approach spans. Because the bridge is located in the tropical hurricane belt, unusually large wind forces were considered in the design. The principal foundation piers are concrete caissons sunk to a depth of about 100 feet through muck and sand to a hard clay formation.

PAN-AMERICAN HIGHWAY BRIDGES

The United States Government is co-operating with Guatemala, Panama and Honduras in constructing a bridge in each of their countries on the projected Pan-American Highway. The bridges are designed by the U. S. Bureau of Public Roads and this Government furnishes and erects them on foundations furnished by the local governments. All of the bridges have relatively short spans but are of the suspension type because this type is considered better able than other types to resist the earthquakes in this region. All of these bridges are completed or under construction.

LINCOLN (MIDTOWN) TUNNEL

The first tube of the vehicular tunnel under the Hudson River at 39th Street in New York City, as described in THE AMERICAN YEAR BOOK, 1936, p. 635, was opened for traffic at the close of the year. This is the south tube of a project including two tubes and will carry one lane of traffic in each direction until the north tube, which is now under construction, is completed. The contract for the north tube was awarded early in 1937. These tunnels are driven in the soft ground in the river bed by means of shields from which the water-laden silt is excluded by compressed air as the excavation proceeds. The shield is advanced at a record-breaking rate which has reached over 1,000 feet in a single month. The length of these tunnels is about 6,000 feet and their external diameter is 31 feet providing for roadways 21½ feet wide. They are lined with segments which are mostly of cast iron embedded in concrete. The Port of New York Authority under whose direction these tunnels are being constructed, estimates that, in 1948, the traffic across the Hudson River will reach 75,000,000 vehicles annually which is five times the 1915 traffic. This will reach the combined capacity of all of the present facilities including the completed Lincoln Tunnel, the Holland Tunnel, the George Washington Bridge and the ferries. During the year, new records were established for traffic across the Hudson River. For the first eight months, the Holland Tunnel carried 8,585,000 vehicles, the George Washington Bridge 5,350,000 vehicles and,

during the month of August, these structures carried 1,225,000 and 950,000 vehicles respectively.

EAST RIVER TUNNEL

Rapid progress was made during the year on the tunnel under the East River in New York City from 37th Street in Manhattan to Queens. This tunnel is similar in design to the Lincoln Tunnel under the Hudson River. It consists of two cast-iron tubes with external diameters of 31 feet providing 21-foot roadways and having a length of about 6,400 feet as described in THE AMERICAN YEAR BOOK, 1936, p. 635. The tunnel is being constructed under the direction of the Port of New York Authority at an estimated cost of $58,000,000 and is scheduled for completion in 1940.

THE DELAWARE RIVER TUNNEL AQUEDUCT

On March 24, 1937 construction started officially on New York City's Delaware River Aqueduct project which includes 85 miles of pressure tunnel and three reservoirs in the Catskill Mountains at the headwaters of the Delaware River and Rondout Creek, a tributary of the Hudson River. The aqueduct will be in tunnel throughout its entire length. In general, the depth of the tunnel below the surface will be from 300 to 1,000 feet, but under the Shawangunk range, it will reach a depth of 2,500 feet. This project will increase the available water supply for the city 540,000,000 gallons per day or over 50 per cent at an estimated cost of $273,000,000.

PROPOSED CONTINENTAL DIVIDE TUNNEL

On Dec. 28, President Roosevelt approved the starting of construction on the Grand Lake, Big Thompson trans-mountain diversion project in Colorado which provides for the annual diversion of 310,000 acre-feet of water from the western slope of the Continental Divide in Colorado, whose elevation is 14,000 feet at this point, through a 9-foot tunnel 13 miles long under the divide at an elevation of about 8,300 feet and finally into the Big Thompson Creek on the eastern slope. This water will be used to augment the supply now available for irrigating 615,000 acres of land near Fort Collins and to generate power at a hydroelectric plant with a capacity of 38,000 horsepower located in Estes Park and operating under a head of 705 feet. A part of this power will be transmitted across the range for use in raising water 130 feet from a proposed reservoir near Granby to the elevation of the west portal of the tunnel which is at the head of Grand Lake. Potential water power will be available to operate four additional plants below Estes Park as the demand for their power develops. The tunnel will pass under Rocky Mountain National Park but both portals are located outside of the boundaries of the park. The initial project includes the construction of three large earth- and rock-fill dams to create storage, reservoirs, one power plant, the tunnel, and 30 miles of canal at an estimated cost of $44,000,000. The project is being developed by the U. S. Reclamation Bureau.

NEW YORK CITY'S SUBWAYS

Subway construction was active during the year in New York City as work progressed on the Sixth Avenue line which is the closing link in the 55-mile Independent System started in 1925 and owned by the city. The new line extends from 9th to 53d Streets or 2¼ miles and will cost about $14,000,000 per mile or $2,600 per lineal foot of subway. Between 28th Street and 40th Street, the cost runs about $23,000,000 a mile or $4,400 per lineal foot. The total length of the subways in New York City is about 270 miles. These subways carry about 830 miles of track. The future of the Sixth Avenue Elevated line which runs above the new subway is somewhat uncertain. It is being maintained at a cost of $5,000,000 while the subway is being constructed but will probably be abandoned when the new subway is opened to traffic.

On July 1, the 4½-mile subway

between Brooklyn and Queens on the Independent System was opened. The cost of this project was $35,000,000. On the last day of 1936 the 3½-mile extension to the Queens branch of this system was put into operation. This extension runs from Roosevelt Avenue to a new terminus at Kew Gardens.

In October, 1937 the first contract to extend the Independent Subway System of New York City to the site of the 1939 World's Fair was awarded.

COLORADO RIVER AQUEDUCT

Rapid progress has continued on this project which is described in THE AMERICAN YEAR BOOK, 1936, p. 634. By the middle of the year, all of the tunnels on the main section had been completed except the San Jacinto. In August, the lining of San Rafael tunnels Numbers 1 and 2, located on the distribution system in Pasadena, Los Angeles and Glendale, were completed. At that time more than 104 miles of tunnels had been excavated and 95 miles of concrete tunnel lining had been completed, making the entire project 65 per cent complete. Labor difficulties, which developed in August, have retarded the construction on the San Jacinto tunnel which is 13 miles long and is considered the most difficult work involved in the construction of the aqueduct.

This project involves the expenditure of $220,000,000 by the Metropolitan Water District of southern California for bringing 1,500 cubic feet of water per second into Los Angeles, and the adjoining area from the Colorado River at Parker Dam, now under construction 155 miles below Boulder Dam. The main aqueduct is 241 miles long but the entire project, including the distribution system, is 392 miles long and involves the construction of 28 tunnels with a total length of 108 miles. The 237-mile transmission line which will carry electric power generated at Boulder Dam to the five pumping plants located along the eastern portion of the aqueduct has been completed. These plants raise the water 1,600 feet over the divide which lies between the Colorado River and the coastal plane on which Los Angeles is located. It is expected that water will be flowing through the aqueduct by 1939.

FLORIDA SHIP CANAL

This project, which was described in THE AMERICAN YEAR BOOK, 1935, p. 631 and 1936, p. 634, consists of a 195-mile sea-level ship canal across the northern part of the Florida peninsula, which is estimated to cost $200,000,000. An appropriation of $5,000,000 from relief funds was made by President Roosevelt in 1935 to start this project, but when this fund was expended, construction ceased because the project was ineligible for PWA funds and Congress declined to make appropriations for this purpose. During the year, the Chief of Engineers of the U. S. Army recommended the project but the bill authorizing the completion of the canal was not reported out by the Rivers and Harbors Committee of the House of Representatives.

NEW YORK CITY'S WEST SIDE PARK IMPROVEMENT

As summarized in the *Engineering News Record,* June 10, 1937: "Extension of New York City's remodeling job along the Hudson River waterfront into the uptown area of parks has resolved itself into the largest construction operation in the East. At the same time it is one of the most notable current undertakings in its technical details. From 72nd Street northward to St. Clair Place (129th St.), Riverside Park is being widened by new filled areas, a five-track railroad is being covered, an express highway is being built, and such park structures as field houses, play grounds and wading pools are under construction. From St. Clair Place to Dyckman Street (200th St.), the express highway is being extended (on elevated steel structure when necessary), and new filled areas are being added to Fort Washington Park. At Dyckman Street connection is made with the Henry Hudson Parkway whose capacity will be increased by building a mile-long parallel roadway for one-

way traffic through Inwood Park to connect with an upper deck to be added to the Henry Hudson Bridge over the Harlem River. Construction operations thus are spread along seven miles of Hudson River waterfront and, since a Fall date has been decreed for opening the express highway, feverish activity prevails. When the job is finished, however, a motorist leaving Westchester County's Sawmill River Parkway at the city line will be able to drive the 16 miles south to the Holland Tunnel at Canal Street without encountering a grade crossing."

KEY WEST OVERSEAS HIGHWAY

In 1912, the Florida East Coast Railway completed a 33-mile overseas extension along the keys to Key West, Fla. at a cost of $26,000,000. The project was not a financial success but was continued in operation until 1935 when a hurricane damaged the line to such an extent that service was discontinued, and the extension abandoned for railway use. The Overseas Road and Toll Bridge District acquired the rights to this extension and, with funds provided by PWA, is constructing a highway which is said to include the longest continuous overseas bridge in the world for automobile traffic. Tolls will be charged to retire the bonds in a thirty-year period and are expected not to exceed one dollar for a car and driver. No date has been set for the completion of the project.

SAN JACINTO TOWER

A monument 564 feet high is being built at the San Jacinto battle field to commemorate this battle by which Texas won its independence from Mexico April 21, 1836. The monument consists of an octagonal shaft 47 feet thick at the bottom and 30 feet thick at the top, surmounted with a star 45 feet high. The shaft is constructed of concrete and faced with Texas Limestone.

CHIMNEYS

A reinforced concrete chimney 605 feet high with a diameter at the bottom of 44 feet and at the top of 14 feet, was completed during the year for the Selby smelter of the American Smelting and Refining Company on San Francisco Bay. It is believed to be the tallest reinforced concrete chimney in the world.

The tallest reinforced concrete chimney outside of the United States was completed during the year at the gold smelter of the Nippon Mining Company in Chinnampu, Korea. It extends 600 feet above the top of the foundation and has an outside diameter of 44 feet at the bottom and 26 feet at the top. A reinforced concrete chimney 410 feet high at Marion, O. was completed during the year.

RADIO TOWERS

A self-supporting radio antenna tower 817 feet high for Station KHQ at Spokane, Wash, was completed during the year and is believed to be the tallest structure of its type in the world. It is a steel framed structure 12 feet square at the base and tapers to a small dimension at the top. Forming each corner of the square is a structural steel angle member which diminishes in size from 8 inches by 8 inches at the bottom to 1½ inches by 1⅓ inches at the top.

A guyed radio-antenna tower 710 feet high for Station KDKA was put in service on Oct. 30. It is triangular in cross section with round vertical bars at the corners trussed with round diagonal bars, all welded together in 32 sections which are bolted together at their junctions.

PUBLICATIONS

Current news concerning structural engineering projects may be obtained from the *Engineering News Record, Western Construction News, Construction Methods and Equipment,* and the *Reclamation Era,* the first of which has provided most of the information on which this review is based. The *Annual Report* of the Chief of Engineers of the U. S. Army and the *Annual Report* of the Bureau of Reclamation present detailed information concerning the work of these organizations for each year ending June 30.

MECHANICAL ENGINEERING

By Donald B. Prentice

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GENERAL

Better business conditions during the first half of 1937 resulted in the provision of more funds for research than had been available in any of the three previous years. Committees of the American Society of Mechanical Engineers and research workers in university and industrial laboratories were encouraged to continue and enlarge their programs. Although labor difficulties and business recession introduced an element of uncertainty in the summer and fall months, sufficient research and development activities were in progress to produce numerous interesting and valuable results for the year. Of all the branches of engineering mechanical is most closely related to and dependent upon industrial labor. The prospect of higher wages and fewer hours invariably has two successive consequences which materially affect progress in the field. The first effect is a reduction in research expenditures while general business conditions are studied and an attempt is made to diagnose the trend of sales. The second effect is a stimulation of technical and management research in an effort to reduce other costs as an offset to the higher labor rates. At the close of 1937 the second effect is approaching and 1938 should witness considerable progress in many branches of mechanical engineering. This prophecy is subject to correction if labor and political uncertainties continue to an unreasonable degree.

RESEARCH

Further studies of fluid meters have been made during 1937 under the administration of a committee of the American Society of Mechanical Engineers. The research has been devoted especially to orifices. Another committee of the Society has continued the study of the strength of gear teeth with tests of surface fatigue of the metal. Hardness has been checked before and after the tests to determine what, if any, changes are produced by the fatigue. Samples of the same materials will be tested, also, for fatigue of flexure to discover whether any relationship exists between that and surface fatigue. Interesting and valuable results should be ready for publication in the near future.

Research has continued in a related field on the fatigue properties of helical springs, the experiments having been conducted at Wright Field and in the Bell Telephone Laboratories. For 1938 similar tests will be made on elliptical springs. The results of these spring tests, when published, will be of much interest and value to railroad and automotive engineers.

Further study has been made of cutting fluids on Monel metal and on annealed steel. Items studied were the life of the tools in satisfactory cutting condition, the power required to drive the machine, and the surface finish produced. Much of the available knowledge on the manufacture of products by machining has been collected into a *Manual on the Cutting of Metals*. The editorial work has been completed and the material will be released for publication at an early date.

A subject of considerable general importance in all fields of engineering is the creep of metals. The term creep in this connection refers to a permanent change of dimension of a part, which obviously may interfere seriously with the functioning of a machine. Research on this problem of creep has been in progress for some years and was continued during 1937. Tests were made to compare the creep resulting from torsional loads with the creep caused by ordinary tension. Creep produced by loads applied for long periods of time was studied also. Correlation and checking of all these tests will be neces-

sary, as well as additional research, before the material can be published as established facts.

Research accomplished in certain special fields during 1937 is discussed in other paragraphs of this article.

STANDARDS

The section of THE AMERICAN YEAR BOOK devoted to mechanical engineering records each year progress in the establishment of standards for this particular branch of engineering. Most of the study and development in connection with these standards is done by committees of the American Society of Mechanical Engineers which submit their recommendations to the American Standards Association for final approval. Standards so submitted during 1937 include large rivets, machine tapers, adjustable adapters for spindle drilling heads, and an addendum to the American Standard for cast-iron long-turn sprinkler fittings. A revised safety code for elevators was approved in July.

Progress was made toward standardization, or a revision was made of existing standards, in the following items: twist drills, terminology and definitions for single-point cutting tools, gearing nomenclature, plain washers, roller chains and sprockets, cast-iron pipe flanges and flanged fittings, wrench-head bolts and nuts, and steel flanges and flanged fittings.

Some conception of the magnitude and detail of standards work can be gained from the statistics reported by the standardization committee of the A.S.M.E. This committee has under its jurisdiction 284 subcommittees and subgroups with a total membership of 1,346 individuals. The number of co-operating organizations is 236. Although most of the committee activities are conducted by mail, 56 meetings were held in 1937, and in addition to the various standards listed above more than 30 other items received attention. All of this effort contributes ultimately to the uniformity of designing, the simplification of manufacturing, and the safety of construction. Details of the various standards are beyond the scope of this section, but may be secured by writing to the American Society of Mechanical Engineers.

MATERIALS

Rapid progress has been made during 1937 in the manufacture of articles from molded plastic materials, chiefly the synthetic resins. The production of decorative and art objects has been extended as well as that of small machine parts, both of which types the automobile industry, for example, requires in huge quantities.

Pontalite, a new transparent plastic, has been developed by the du Pont company. This material is as light as other plastics but exceeds them in transparency and brilliancy. Its chemical name is methylmethacrylate. In addition to being molded, pontalite may be drilled, cut and machined. It has possibilities as a substitute for glass and its degree of transparency can be controlled. It can be colored and it has the important characteristic of resisting attack from many solvents. Its tensile strength is high and it will successfully withstand impact.

For many years cast steel has been used in place of machined or forged steel for parts which require fairly high strength and durable wearing qualities. Modern practice is introducing alloy cast iron in place of steel. Automobile engine crankshafts, cam shafts and similar parts of quite satisfactory quality have been produced at lower cost. Patterns are cheaper than dies and, since castings can be cored, lighter parts of sufficient strength can be manufactured. The equipment for molding, melting and pouring as used in a foundry is less expensive than that required in either the forge or machine shops. Hardness can be produced where desired in the casting by chilling or by heat treating. With much less capital frozen in patterns, as compared to that required for dies for heavy forging, changes in design will be viewed more cordially by manufacturers, and the public should receive the benefit of improvements in design more promptly.

An important problem which has been introduced by the adoption of welding in place of riveting is the testing of points. While the destructive testing of samples is a satisfactory plan for verifying the physical characteristics of materials this plan obviously cannot be used for checking welded joints in finished products. Three methods for solving this problem have been developed in recent years and merit brief descriptions. Two of these methods, x-ray and radium, may include photographs for permanent records of the tests.

The magnaflux method of nondestructive examination requires that the material to be tested be magnetized. The powder, finely divided iron plus some other ingredients, is then sprinkled on and near the joint. A study of the patterns taken by the powder particles will reveal any defects which may exist in the weld. This method is good for detecting fatigue cracks, also. X-ray examination is considered better than radium on account of the clearness of the picture and more rapid photography. For example, a welded joint in a 12-inch pipe will require, say, 12 exposures, or 12 or 15 minutes, for a complete examination by x-ray. If a radium capsule is placed at the center of the joint, inside the pipe, and a film is wrapped around the outside, an exposure of a few hours is required, depending on the thickness of the pipe.

Progress during the year has been made in the production of sprayed coatings of and for metals. This technique is used to provide protection against corrosion or to build worn parts of machines back to original dimensions. Zinc, aluminum, tin, lead, nickel, copper, steel or stainless steel may be used as a coating.

The great increase in the use of rubber in mechanical devices, especially in the automobile, in recent years has virtually brought a new material into the equipment of the mechanical engineer. Rubber has two important characteristics, it will absorb vibration and eliminate noise, and it will support motion of small amount without lubrication. As a structural material, however, its physical properties must be known and the year 1937 has seen this knowledge secured for the benefit of designers.

MACHINE TOOLS

The proper materials for cutting tools and the best methods of hardening, treating and grinding these tools have been studied for many years, especially since the possibilities of increasing machine shop output were called to the attention of engineers by Frederick Taylor at the beginning of this century. In spite of all the research which the subject has received progress still continues and current advancement is remarkable. The Bureau of Standards has recently developed new hardening methods for high-speed tools. It has been reported within the year that a shop, supposedly operated in an up-to-date manner, has installed these methods and increased cutting speeds an average of 20 per cent. The resulting savings are estimated at $300,000 per year.

For many years broaching has been considered an operation for forming holes which could not be drilled because of their non-circular cross section. A tool with cross section like the desired hole and with transverse cutting edges, was drawn or pushed through a drilled hole which it enlarged and reshaped to the desired outline. Broaching operations are now used for finishing surfaces, *i.e.*, planing. The great advantage is high production; for roughing and finishing cuts can be made in one operation. The broach wears slowly and the cutting edges are often of the inserted blade type with tungsten-carbide as the cutting material.

Cemented-carbide cutting tools have presented a serious problem to machine shop operators because of the difficulty of grinding. This material is much harder than even high-speed steel. Brinnell numbers, for instance, run from 1500 to 1800 compared to 650 for the steel. In addition to being very hard the material is extremely brittle, more so than steel, which again increases the diffi-

culty of grinding. To avoid cracking, the tungsten-carbide must be removed very gradually and with light pressure between the tool and grinding wheel. In general a softer bond must be used in the wheel for the cutting particles dull rapidly and unless broken out of the wheel will cause excessive heating. Grinding wheels, therefore, break down more rapidly than when cutting steel. A constant motion of the wheel in the direction of the feed must be maintained while grinding to prevent localized heating. In the case of milling cutters, or similar tools, care must be taken to avoid having any edge or edges extend beyond the others as this material is very sensitive to overloading. Dry grinding is preferred but if a coolant is used there should be a large quantity to prevent temperature differences in the carbide.

Considerable study has been given during the year to the quality of finish produced by various machining operations and to a method of measurement of this finish. The method considered best, at present, is known as the straight-edge shadow method. The cutting edge of a good safety-razor blade is satisfactory for producing the shadow.

With the edge placed firmly against the surface to be measured and a strong light producing the shadow, the latter is viewed or photographed through a microscope. If the light strikes the surface at an angle of 60 degrees and the microscope is set at 60 degrees to the surface, also (60 degrees between the direction of the light and the axis of the microscope), the observation of the shadow gives the true profile of the surface. With a magnification of 340 × irregularities on the surface can be observed whose height is less than .00005 inch.

STEAM POWER

The use of superheated steam has brought the temperature up to a point where there is danger of a chemical reaction between the steam and the metal of the boiler and piping. In fact a standard method of producing hydrogen is similar to the conditions which exist in the superheater: the reduction of steam by passing it over hot iron. In this case iron oxide is formed and hydrogen is released. Further study has been made of the possibility of reactions taking place at 1000 degrees, the present upper temperature limit of superheated steam. Apparatus has been developed at Purdue University for testing seven different tube materials simultaneously under identical conditions of steady high temperatures and of heating and cooling cycles. This will enable measurement of the creation of an oxide protective coating, its failure because of temperature changes, etc.

Research has been carried on, also, to study the effect of solutions on the cracking of boiler steel. Some organic compounds have been found quite generally effective in preventing failure, while sodium hydroxide–sodium silicate solution is successful under certain limited conditions. Reports on many of these various boiler tests should be available in 1938.

Because of the sulphuric acid which it forms, sulphur dioxide is an objectionable substance to discharge from a power plant stack. The past year has witnessed the development of a scrubber for eliminating this gas by absorption. The capacity is greater than that of any similar apparatus used in the chemical industries. From a stack gas carrying only 0.2 to 0.3 per cent SO_2 98 per cent of the sulphur dioxide can be removed even when 1,500,000 cu. ft. of gas are being treated per minute.

This large figure suggests the reporting of the installation of a single unit boiler with a capacity of 1,000,000 lb. of steam per hour. The boiler will operate at a pressure of 1,425 lb. per sq. in. and a steam temperature of 925 deg. It was built for the Appalachian Electric Power Company at Logan, West Virginia. This unit is ten times as large as the largest boiler in existence 25 years ago. Two other large boilers installed during 1937 have capacities of 750,000 and 660,000 lb. of steam per hour, respectively.

According to Professor Christie, modern power plant practice trends to water-cooled furnaces, pulverized coal burners in preference to stokers, direct firing rather than bin storage. No standard division of heating surface between furnace walls, boiler tubes, superheater and economizer has been accepted.

The greater increase in size of boilers has made testing by the usual procedure extremely difficult. It is a real problem to measure, directly, 1,000,000 pounds of water an hour. Fortunately most of the heat losses incurred when fuel is burned are calculated from data which can be determined without serious difficulties. It is possible, therefore, to reach a measure of the performance of a boiler in a negative way. Instead of calculating the heat absorbed by the water as it is turned into steam, which indicates the efficiency of the unit, all the losses of heat are calculated and the efficiency is arrived at by subtraction from 100 per cent.

GAS POWER

Until recently competition between gas or oil engines and steam turbines has been limited both by the greater cost of the engines and the restriction on capacity. Oil engines were not available in sizes large enough for use under most central station requirements. This second limitation has been to a large extent removed by the increase in horsepower per cylinder now available in large two-cycle Diesel engines. Units with total capacity of 20,000 horsepower per engine are now constructed, which bring this prime mover definitely into competition in central station service, especially when fuel costs are favorable to the oil engine.

A source of power which has received little general attention has been developed in recent years in connection with sewage disposal plants. More than a dozen municipal plants now have engines operating on sewage-sludge gas. One of the largest, at Washington, D.C., develops 1,200 horsepower. If the reaction of decomposition is kept slightly alkaline sewage-sludge gas contains about 65 per cent methane. A sewage treatment plant is, therefore, a natural-gas well, provided decomposition is maintained in the absence of oxygen. About 0.8 cu. ft. of gas per day per person served by the collecting sewers will be available, which may be increased to 2 cu. ft. if the custom of dumping ground garbage into the sewers is introduced. At Peoria, Ill., 835 horsepower has been developed continuously on sewerage from a population of 110,000.

TRANSPORTATION

This section of The American Year Book for 1936 referred in highly complimentary terms to the reliability and safety of service of the old *Graf Zeppelin* on South American routes and the regularity of the North American service inaugurated by the *Hindenburg*. The tragic end of the latter has entirely changed the picture. And several serious accidents of heavier-than-air machines, both in this country and abroad, have emphasized again the uncertainty of this form of travel. However, the so-called Clipper ships have made excellent records and transatlantic service is a possibility during 1938.

High speed train service has been extended and operation has been without serious accident. The use of welded structures has contributed to the lightness and strength of the equipment. Both steam and oil locomotives seem to maintain their positions in the high speed field. In fact, when the oil engine power plant of a much-advertised fast train in eastern service fails, an ordinary steam locomotive is coupled on and the schedule made as usual.

Steam pressures for high speed locomotives are not excessive, in fact, have been kept surprisingly low. They do not exceed 400 lb. per sq. in. and in general run from 250 to 300 lb. per sq. in.

High speed train operation has introduced a serious problem in the matter of braking. Theoretically a train can be brought from a speed of 100 miles per hour to a stop in 2,600 feet with a constant retardation of 3.5 miles per hour per second. However, this cannot be

done with present equipment for not enough wheels are used to avoid excessive temperature increase. The best performance with conventional equipment is said to require 4,800 feet for the stop described above. The roadbeds of most American systems will safely stand higher speeds and the problem has become almost entirely economic. How much will the public pay for the more expensive, faster transportation?

MISCELLANEOUS

An interesting installation during 1937 was that of a 270-ton Gantry type crane at the Wheeler Dam in the Tennessee River. The crane has a span of 69 feet and is used for handling parts for the hydraulic turbines. The control which the operator is able to maintain over the huge machine is especially remarkable. It is reported that the load can be lowered and stopped by amounts as small as one-sixteenth of an inch.

In contrast may be noted the use of ball bearings as a substitute for jewels in watches. From three to eight balls are used in each bearing with overall dimensions on the order of 1.5 mm. It is claimed for these bearings that the friction is much lower than for plain bearings and that the lubrication requirements are about one-seventh.

Some further studies have been made of inexpensive methods of cooling residences by attic fans, ice and mechanical refrigeration. It has been established in several experimental houses that the inside temperature can be kept from ten to 15 degrees below outside temperature by following simple rules and by night cooling with exhaust fans.

An interesting instance of the use of laboratory methods on an experimental model to determine qualities of performance which would be shown by the full size hull took place in the towing tank at the Stevens Institute of Technology. It is reported that the naval architects designed the cup-defender partly on the results of these tests and introduced innovations which would not have been considered without the advantages of model performance. At any rate the defender's behavior at sea entirely justified the designers' ideas and confirmed the experiments.

ELECTRICAL ENGINEERING

By Cornelius N. Weygandt

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INTRODUCTORY

The electrical engineering profession concerns itself with the following fields of activity: the generation of electrical power, the manufacture of electrical apparatus, the use of electricity in industrial plants and the communications industry.

In 1936 the total output of electrical energy in this country was nearly 106,000,000,000 kilowatt hours, more than had ever been generated in a single year. In spite of an unseasonable decline toward the end of the year it appears that the output for 1937 will exceed that of 1936 by some ten per cent. During the week of Sept. 4 more than 2,320,000,000 kilowatt hours were generated, a new all time high. Early reports from England and Canada also point to substantial gains in the production of electricity.

Bureau of Census reports give the total orders booked by the electrical manufacturers in the United States in the first six months of 1937 a value of $532,000,000, an increase of 55 per cent over the corresponding period in 1936 and only 4.5 per cent less than the orders booked in the first half of 1929. In the last half of 1937, the increase over the previous year was not quite so marked. Reports from three leading manufacturers for the first nine months of 1937 showed

an increase in orders booked of 37 per cent over those in the same period in 1936.

Industrial consumption accounted for two-thirds of the increase in electrical energy used in 1936, when for the first time it passed the record of 1929. Continued increase in industrial use of electricity took place in 1937, especially in steel and automotive plants.

The death of Elihu Thomson on March 13, 1937 at the age of 84 marked the passing of the last of the group of men intimately connected with the early history of electrical engineering in this country. He will be remembered together with Edison, Stanley, Houston, and Westinghouse as one of the early electrical inventors and manufacturers, and also as one of the greatest teachers of electrical engineering.

GENERATION OF ELECTRICITY

Capacity.—The total generating capacity in the United States at the beginning of 1937 was 36,597,199 kw., according to a report of the Federal Power Commission. Of this 70 per cent was in steam generating plants, 28.4 per cent was in hydro-electric plants, and 1.6 per cent in internal combustion engine plants. The ratio of total energy generated to total generating capacity was higher than it had been for ten years. Many additions to generating capacity were undertaken in 1937, and those scheduled for completion will increase the total by nearly 1,250,000 kilowatts.

Pressures and Temperatures.—The general trends in the design of steam plants are much the same as in the past few years. Steam pressures range from 1,200 to 1,400 lbs., and throttle temperature from 850 to 950 degrees Fahrenheit. One noteworthy exception is a proposed addition to the Twin Branch Plant of the Indiana and Michigan Electric Company, a subsidiary of the American Gas and Electric Company. This installation will involve a 22,500 kw. turbine operating at 2,400 lbs. pressure and 940 degrees Fahrenheit. This pressure is nearly double that of any existing unit in the United States, although such high pressures have been used before in Europe in much smaller turbines. The reason for going to such a high pressure is that all the equipment including the boiler, piping and auxiliaries can be made so much smaller in physical size that it is less expensive in spite of the greater strength necessary. The turbine, like most of the others built in 1937, will run at 3,600 rpm, and be cooled by hydrogen gas.

Most of the newer turbines are 50,000 kw. or under. An exception to this is a 110,000 kw. turbine installed in the River Rouge plant of the Ford Motor Company. This unit under actual test delivered a kilowatt hour for every 0.6 lbs. of coal burned in the boilers. The average for the nation in 1937 was 1.47 lbs. per kw.-hr.

Most of the turbines operating at throttle temperature of 925° Fahrenheit or above are of the double shell type. The inner shell of the turbine is enclosed in an outer jacket, and steam at 400 or 500 degrees is calculated between the jackets. This reduces the temperature gradient which must be withstood by the steel of the shell. An idea of the temperature in a modern turbine can be gathered from the fact that an iron pipe carrying steam at 950° Fahrenheit would be heated to a dull red.

"Steamotive" Unit.—An interesting attempt to improve the overall efficiency of boiler, turbine, and generator is the "steamotive" unit. This is a compact design resulting from the co-operation of boiler, turbine and combustion control manufacturers. Two of the units are being built for use on locomotives, and because of their small size and high efficiency they may find other uses.

Steam Storage.—In order to have a large reserve of energy instantly available a system of accumulators for storing steam of 1,700 lbs. pressure connected to low pressure mains through a reducing valve has been tried out in Europe with great success. In this country quick acting controls and forced draught fans

with high acceleration have been used for the same purpose.

In the layout of some plants where increased output is obtained by superposing high pressure units on the existing turbines it is necessary to obtain some low pressure steam for heating the boiler feed water. If no provision was made for bleeding this steam from the old low pressure unit it has been found economical in some cases to install a small low pressure turbine for the sole purpose of heating the feed water.

Hydrogen Cooling.—The electrical design of turbo generators did not change much in 1937 except for provision for hydrogen cooling. One machine used an aluminum field winding in order to reduce the weight of the rotor. The efficiency of a modern tube-alternator may be as high as 98.6 per cent.

Hydro-electric Construction.—Most of the hydro-electric plants completed or under construction in 1937 were those financed by the Government. At Boulder Dam four 82,500 kva generators are now in operation, and four more are in the course of construction. At Bonneville Dam on the Columbia River in Oregon, the first of ten 43,200 kw. generators went on the line early in 1938, driven by the largest Kaplan type turbine built so far and rated at 60,000 hp. but capable of developing as much as 66,000 hp. The blade angle and wicket gate opening is controlled automatically. The governing mechanism is electrically controlled and oil actuated, and is capable of unusually quick response.

TRANSMISSION AND DISTRIBUTION

Circuit Breakers.—An interesting development in transmission practice tried out in 1937 is the ultra-high speed reclosing of circuit breakers. The circuit breakers at the ends of a transmission line are equipped with mechanisms capable of reclosing them so quickly that the actual interruption of energy flow is for as short a time as 0.03 to 0.09 seconds. In case the disturbance which caused the operation of the circuit breakers was of extremely short duration such as some of those caused by lightning, the circuit breakers are closed again and the line restored to normal operation so quickly that synchronous apparatus at the ends does not fall out of step.

High Voltage Cables.—A short length of oil-filled cable for 220,000 volts was installed in Paris during the year. Although several manufacturers in this country have been experimenting with equally high voltage cables, there are not as yet any commercial installations. One of the difficulties with high voltage cables has been that, during cooling periods when the insulation is contracting the pressure in any voids which may exist in the cable, insulation will become very much less than atmospheric. This condition causes ionization of the gas in the voids and leads to deterioration of the insulation. One manufacturer has overcome this difficulty by enclosing the finished cable in a tight rubber wrapping. This constricts the sheath of the cable and puts the insulation under such high initial stress that the internal pressure never becomes dangerously low, even during cooling periods. For lower voltage cables several new types of synthetic organic insulation with properties similar to rubber have been developed. One of them does not support combustion, another is not affected by corona, and a third is highly resistant to the affects of moisture.

Lightning Protection.—Methods of protection against lightning have received much attention in the past year. Peterson coils, which have long been used in Europe, are becoming more popular in the United States. There were at least eight installations made here in 1937. A new type of autovalve lightning arrester has been developed in which special attention has been paid to designing the interruption characteristic in such a way as to eliminate 60 cycle transients. This means that disturbances due to operation of the arrester will be reduced to a minimum. Improvements in the design of cathode ray oscillographs for field study of the effects of lightning have been con-

tinued. One oscillograph was mounted in a truck so that voltages at various points on a line could be recorded under actual operating conditions. In the course of these lightning studies it was found that in some lightning strokes the voltage builds up to its final value quite slowly. Since it is the rapid rise of voltage which produces the air disturbances that cause the noise of thunder, the slow rising lightning strokes would be without thunder.

Current Limiters.—In low voltage distribution systems it has long been the practice to design underground cable installations in such a way that faults can burn themselves clear with a minimum interruption of service. The design of such system was simplified in the past year by the development of current limiters or fuses which can be spliced into the joints of cables. These limiters burn through when the current exceeds a certain value for a certain length of time, and so localize the damage done by burning clear a fault.

There has been a tendency in distribution systems designed in 1937 to put small reclosing circuit breakers closer to the loads. This has been made economically possible by the design of simpler and less expensive circuit breakers. Capacitors have also been made smaller, lighter, and cheaper, so they can be installed closer to loads for more efficient power factor correction. A new practice in house wiring has just received the approval of the Board of Underwriters. In this system the neutral wire is at ground potential and uninsulated. The actual conductors are of concentric design; the bare neutral wire is wrapped around the insulated conductor. Such a system was used many years ago in the early days of electric lighting, and its revival will, in certain cases, make possible less expensive and safer installations.

LOAD BUILDING

Domestic Consumers.—In 1937, as in the past few years, there was great activity on the part of the public utility companies in an attempt to increase the use of electrical energy, especially by domestic consumers. Electric ranges have been improved in efficiency and reduced in cost so that they are not such an expensive luxury as they were a few years ago. Many companies have arrangements whereby water is heated electrically in times of light load at a considerably reduced cost per kilowatt-hour. This plan requires separate metering of the electricity used by the hot water heater and that used for other purposes.

Air conditioning, which has long been regarded as one of the greatest potential load builders, is becoming more of an item each year. During the first nine months of 1937, nearly $74,000,000 worth of air-conditioning equipment was sold in the United States, an increase of 90 per cent over that sold in the same period in the previous year.

Farm Electrification.—In the electrification of farms, about which there has been so much publicity, it has become evident in most localities that unless the farmers use current for more than lighting and pumping water, the building of rural lines cannot be justified economically. On this account intensive studies have been made of possible uses of electricity on farms. One new device which has proved very popular is an electric boiler to provide steam for sterilizing milk cans. The sum of $50,000,000 was available in 1937 under the Rural Electrification Act for extending electric service to farmers. By the middle of July 90 per cent of this money was already allotted. It is estimated that over 50,000 miles of rural lines were built in 1937 by the combined efforts of the Rural Electrification Administration and the public utilities.

INDUSTRIAL USE OF ELECTRICITY

Among the most spectacular industrial users of electricity are the steel manufacturers. They require tremendous amounts of power, which can be furnished by motors developing thousands of horsepower, and extreme delicacy of control, which can be accomplished by vacuum tube cir-

cuits, such as those measuring thicknesses in thousandths of an inch. A 72 inch continuous strip mill capable of rolling 600,000 tons of steel in a year was erected in the past year by the Bethlehem Steel Company at Sparrows Point, Md. This mill embodies the latest developments in electric drive and control. In order to handle the large currents generated for the main roll drives a circuit breaker had to be designed which could interrupt half a million amperes repeatedly without damage.

In 1937 an electrically heated continuous normalizing furnace for annealing sheet steel for automobile bodies was built and operated successfully. It handles seven and a half tons an hour, and the steel is heated in an atmosphere of hydrogen to prevent the formation of oxides. Another new use of electricity in the steel industry is in the electrogalvanizing of wire. One plant, completed in the past year, galvanizes 40 strands of wire at one time at a rate of from 35 to 70 feet per minute. For this process a current of 80,000 amperes at seven volts can be supplied by four 20,000 ampere motor-generator sets.

Electrostatic precipitation of dust particles from the air has found several industrial uses. In one case a china manufacturer desired to retrieve valuable dust particles that were scattered through the air in the course of a glazing process. Another use of a precipitator was to eliminate dust from the air of a telephone exchange, so that it would not interfere with the operation of relays by collecting on the contacts. A very large electrostatic precipitator was installed as a part of the air-conditioning system in the Field Building in Chicago. It can handle 272,000 cubic feet of air per minute, removing 99 per cent by weight of all particles, and 12,000 volts d-c is furnished by 18 rectifier units to accomplish the precipitation.

An interesting job of electric heating was done in a large airplane hangar in California. Since the ceiling of the hangar was very high and it was necessary to keep the floor entirely free from obstructions, the heating was accomplished by running heating elements through a network of conduits buried in the concrete floor. This proved to be an economical installation and provides very comfortable working conditions.

RELAYING AND CONTROL

Relays are devices which detect the presence of short circuits or other sources of trouble in power systems and cause the operation of protective devices. The great improvements in circuit breakers made in the past few years have made necessary extremely fast operating relays. In order to reduce the inertia of the moving parts of the induction type relay the older disc element is now being replaced by a cup of small diameter. This also makes it possible to simplify the magnetic circuit, and so reduce the relay to a third of its former size. To avoid the necessity of using an auxiliary relay with the consequent loss of time the contacts of high speed relays must be made to handle fairly high currents. In some cases cold cathode vacuum tubes have been used as auxiliary relays, because their operation is almost instantaneous.

As in the past few years many of the new industrial control devices developed in 1937 use some sort of electronic device. One of them uses a photo-electric tube to detect skew in cotton cloth and to control the tension in a winding machine in such a way as to avoid skewing the cloth. Another device centers the paper on a printing press by observing a line printed on the paper with two photo-electric cells which operate a motor to correct the alignment of the paper if the printed line deviates from its proper position. Electronic devices have also been used in machines for sorting oranges, and for grading examinations of the true-false type. A means has been developed for amplifying and analyzing the tick of a watch, so that adjustments that formerly took several days can be made in a few minutes. A generator voltage regulator having no moving parts makes use of a grid-controlled

mercury vapor rectifier. This voltage regulator is remarkably quick acting, and has no contacts to wear out or cause trouble. For very precise and quick voltage regulation in cases where a very small amount of power is involved a special gaseous discharge tube has been developed. By the use of this tube a circuit has been devised such that the output voltage changes only 0.005 per cent for 20 per cent change in the input voltage.

A signboard 20 feet high and 30 feet long mounted high above Broadway in New York City displays animated cartoons outlined in electric lights. This is accomplished by projecting the cartoons in black and white on a bank of photo-electric cells each of which is connected to one of the lights on the main signboard. The lights connected to the photo-electric cells in the dark part of the bank at any instant are put out, and those connected to the lighted part of the bank will be lighted. This arrangement makes it easily possible to reproduce an infinite variety of effects on the signboard.

ELECTRONICS

It is possible to show mathematically that the largest magnification of an object that can be obtained with an ordinary system of lenses is approximately 400 times its actual size. This limitation is definitely fixed by the length of the waves of visible light. This difficulty can be overcome by using a beam of electrons to "illuminate" the object. The viewing must be done by a cathode ray tube which converts the electron beam into visible light. Magnetic fields can be used to bend and focus the electron beams as lenses do in the case of visible light. Since the wave length of an electron beam is only one thousandth that of the shortest wave length of visible light, the theoretical magnifying power of an electron microscope is 400,000. One such microscope which has been actually constructed recently has a magnifying power of 10,000 times.

A mercury vapor tube originally developed to give quick brilliant flashes of light for stroboscopic work has found other uses. The tube, which is now called a strobitron, can be used as a grid controlled arc rectifier capable of handling hundreds of amperes for short intervals. As such it has been used to initiate the current flow in a seam welding machine. A new large high frequency vacuum tube has been developed which produces 250 watts of power at a wavelength of six meters for use in therapeutic work.

The customary method of controlling the plate current in a vacuum tube is by means of the potential on the grid. The measurement of small displacements can be accomplished by providing some way of changing the displacement into a voltage. A new tube is arranged so that the position of the plate can be changed from outside the tube. The tube is of metal and the plate support enters through the center of a flexible diaphragm. By arranging a circuit in which the plate current changes a great deal for a small change in the plate position a very accurate means for measuring small displacements can be obtained.

When very high frequencies are involved the physical dimensions of vacuum tubes become correspondingly small. Some little tubes no larger than hickory nuts were developed in 1937 for use as oscillators in generating waves only 16 centimeters long

ILLUMINATION

Nearly 1,000,000,000 incandescent lamps were sold in 1937. The average cost per lamp was two-thirds what it would have been ten years ago, and the lamps give one-third more light per kw.-hr. The latest improvement is the double coiled filament which reduces the filament length to five-eighths of an inch or about a third of its former length. This lessens the heat loss and enables the lamp to give ten per cent more light for the same power input. A new glass has been found for making bulbs for sodium lamps. A coating of this glass on the inside of the bulbs makes

them better able to withstand the effects of sodium vapors at high temperatures. High intensity mercury vapor lamps have been found excellent light sources for projection service. For producing a daylight quality in flood lighting for advertising purposes a ratio of 85 watts of mercury vapor lamps to 450 watts of incandescent lamps, has been found very satisfactory. A new kind of mercury vapor lamp for use in photography combines the familiar photoflood and photoflash lamps. The new lamp gives a moderate intensity of illumination for focusing and also a brilliant flash for the actual exposure of the film. The flash can be repeated a number of times. A new lamp for treating certain diseases of the skin made its appearance in 1937. The light which it gives does not cause excessive sunburn, but still has a very decided germicidal effect.

The lighting system for the new San Francisco–Oakland bridge is an interesting example of the most modern lighting practice. The roadways are illuminated by sodium vapor luminaire of the latest design. At the tops of the towers are airway beacons which revolve in unison. The control for all the lighting is concentrated at a single switchboard. Signal lamps on the switchboard indicate the groups of lamps which are lighted. Flashing of some of these lamps indicates that the airway beacons are revolving. It is possible for the operator at the switchboard to tell immediately when any light on the bridge fails to function.

ELECTRICAL MACHINERY

Synchronous Pump Motors.—In order to make Colorado River water flow over the mountains to California, the Metropolitan Water District of Southern California has ordered six huge pumps driven by 9000 horsepower synchronous motors. These motors, of the vertical type, are the largest of their kind ever built. In some cases to reduce the current drawn by a synchronous motor during the starting period it is desirable to open-circuit the revolving field of the motor. When this is done dangerously high voltages may appear across the terminals of the field. These voltages may be reduced by opening the field in several places, as is done by an ingenious sectionalizing switch developed in the past year. This switch revolves with the field and is centrifugally operated. As the motor approaches synchronous speed the field voltages are reduced, and when it is safe to do so the switches close automatically.

High Speed Frequency Changes. In order to connect 60 cycle power developed at Boulder Dam with the 50 cycle system in the neighborhood of Los Angeles, an interesting frequency changer has been built. This machine is rated at 60,000 kva, and runs at 600 rpm., which is double the speed of previous similar machines. It is located out of doors and is hydrogen cooled. Provision has been made for separating the two units if in the future a frequency changer is no longer necessary, and running each unit separately as a 60 cycle synchronous condenser.

A further advantage of hydrogen cooling has been discovered by one manufacturer whose tests show that carbon brushes may last ten times as long if run in atmosphere of hydrogen as they would if run in air.

Mercury arc rectifiers have found several new uses in the past year. One is in mines where it has been found economical to use small portable rectifiers which can be located close to the place where the direct current must be used. The rectifiers are designed so that they may be quickly moved to a new location when the occasion arises, without the necessity of using skilled electricians. Another new use for mercury arc rectifiers is for electrolytic cells in chemical plants. Several new circuits have recently been developed for using grid controlled mercury arc rectifiers as direct current transformers.

The copper oxide rectifier, which has long been used in instruments and for low powered battery chargers, is now being built in much larger sizes. One 2,000 ampere unit for use

in electroplating went into service in the past year.

Metal Heaters.—Several new special applications of high-frequency currents in the heating of metals were made in 1937. One was a machine for heating welded joints, especially in pipes, for relieving stresses. Another induction heater gives very sharply defined heated regions for forging operations. A high-frequency induction method for heating the surface of a piece of steel for surface hardening has been developed.

Spot and seam welders for many special purposes have been perfected in the past year. One of the largest welds sections of railroad rails butt to butt. Another one automatically performs the delicate operation of welding a grain of iridium to the nib of a stainless steel pen. Most of the automatic welders use an electronic method for controlling the instant of application and the duration of the welding current.

Transformers.—One of the largest three phase transformers ever built was completed in 1937. It is rated at 53,333 kva., and cooled by three large radiators, each with a separate blower. It has been found that when arcs occur in the new organic insulating materials used in many small and medium sized transformers a small amount of acid is formed. This acid can be detected by a device invented recently which either disconnects the transformer from service, or gives a warning that it is in trouble.

Voltage Switches.—One of the features of the electrical exhibit in the World's Fair in Paris is a huge circuit breaker designed for use in a 500 thousand volt system. Although voltages as high as this are not yet in use, this 40 foot monster seems to indicate that European manufacturers expect they will be before long. In this country one manufacturer has recently announced a line of small vacuum switches with interesting characteristics. The contacts are in a highly evacuated glass or metal vessel. A small amount of motion can be made by one of the contacts which enters the vessel through the center of a metal diaphragm. A switch of this type can rapidly and repeatedly open 10 amperes at 250 a-c without noticeable damage to the contacts.

Antimony in Storage Battery Plates.—For many years antimony has been used to allow the lead grids in storage battery plates in order to make them more rigid. Studies in the past year have shown that antimony in the negative plate has a tendency to form local cells which greatly hasten the sulfation or self-discharge of the battery. It has been found that an alloy of lead and calcium does not have this tendency. It should take much less power to keep cells made with the new alloy charged, especially when the service is such that the normal load on the battery is light.

METERS AND INSTRUMENTS

Smaller Meters.—Predominant tendencies in metering practice in 1937 are to make meters smaller and more readily interchangeable. This saves switchboard space and makes it easily possible to remove meters for calibration, or if necessary replace them with meters of different ratings. Several years ago kilowatt-hour meters that could be plugged into a socket like a radio tube made their appearance. All types of indicating meters of the plug-in type are now available. They are especially popular in industrial plants where a number of sockets can be permanently located on machines about the plant, and meters plugged into them when readings are desired. This keeps the investment in meters low and makes it possible to insert a meter in the circuit of any machine without shutting down the machine or requiring the services of an electrician.

Instrument Materials.—Several newly developed materials have made possible the design of smaller and more accurate instruments. Aluminum nickel alloy steels marketed under the trade name "alnico" make better permanent magnets for moving coil instruments. Resistances of as much as 3000 ohms per volt of full scale reading are now possible. The

scales can also be made to include more degrees of arc. A new silver tellurium alloy has been discovered which has a negative temperature coefficient of resistance. This makes it possible entirely to compensate for temperature changes in instruments having copper coils by putting a small resistor of the new alloy in series with the coil.

Special Instruments.—Many new instruments have been developed for special purposes. A new resistance bridge combining a Wheatstone bridge and a vacuum tube voltmeter accurately measures resistances up to 10,000 megohms and detects resistances of as much as 1,000,000 megohms. Photo-electric cells are a part of several recent instruments. A double photo-electric recorder simultaneously records on a chart two readings which may be as low as one microampere for full scale deflection of the pen. A new potentiometer of the self-balancing type uses two photo-electric cells, as does an instrument for drawing hysteresis loops of samples of iron.

Conductor Potential.—An inexpensive and sufficiently accurate method of measuring both the magnitude and phase of the potential on a high voltage conductor appeared on the market in 1937. A conductor more or less in the shape of an inverted dishpan is located near the conductor whose potential it is desired to measure. The voltage between the dishpan and ground can be shown to be proportional to the voltage on the conductor. The device has been found to be sufficiently accurate for relaying and synchronizing purposes.

Noise Analysis.—The question of noise in electrical and other equipment is one that is receiving more and more attention. Various new noise measuring and analyzing devices made their appearance in the past year. One of the most serious causes of noise is vibration. In order to better understand the nature of vibration an instrument has been developed which measures not only the amplitude but also the velocity of vibration.

Cable Faults.—For many years faults in cables have been located by making measurements at the ends of the faulted cable. In some cases these methods require considerable time and skill both in making the measurements and in computing the distance after the measurements are made. A new device called the "telemetragraph" was made commercially available in the past year which locates faults by impressing a continuously varying frequency on the cable and recording the current waves graphically. A few simple measurements from the resulting graph determine the distance to the fault with great accuracy.

Electrical Computors.—In order to solve a large number of catenary design problems in connection with the layout of a transmission system an interesting electrical computer was built. By means of this computer, based on the analogy between the electrical and mechanical systems involved, electrical analogues of the mechanical quantities which would be difficult to calculate are quickly and easily read on meters. Another electric network analyzer or calculating board for the study of electric power systems was completed in the past year. This analyzer, which is really a miniature power system so flexible that it can be set up to simulate almost any existing large system, is similar to several others in existence, but embodies several new features. The meters used for making measurements on the miniature system are of the vacuum tube type and so draw negligible current. The controls are centrally located so that the operator can make measurements on any part of the system without changing his position.

Oscillograph.—An improvement has recently been made in an automatic cathode ray oscillograph whereby the time axis for the first few microseconds is furnished by means of an electronic sweep circuit, and subsequently by movement of the film. This allows time for acceleration of the film, and still shows the start of the phenomena to be studied. Another interesting use for

the oscillograph, this time of the electromagnetic type, was made in the past year. This was the recording on the same film of the mechanical movement of relay parts and the current and voltage applied to the relay. Such records are of tremendous importance in studying and improving relay performance.

ELECTRIC TRANSPORTATION

Pennsylvania Railroad.—In January, 1937, the Pennsylvania Railroad started the electrification of its main line between Philadelphia and Harrisburg. The total contracts let for this work amounted to nearly $50,000,000. When electrification of freight yards and branch lines are included a total of 773 miles of track will be involved. By the end of November this electrification program was 75 per cent complete so that it seems likely that the job will be entirely finished by the spring of 1938, several months ahead of schedule. When it is complete the Pennsylvania Railroad will have 2,677 electrified track miles, or more than 40 per cent of the total electrically operated standard railroad track in the entire country.

Other Railroads.—The New York, New Haven, and Hartford Railroad has ordered six new stream-lined electric locomotives larger than any that they are using at present. They will weigh 430,000 lbs., developed 3600 h.p. and be capable of a speed of 80 m.p.h. The Baltimore and Ohio has in operation two large diesel electric locomotives rated at 3600 h.p. and weighing 569,000 lbs. These locomotives, which pull fast passenger trains, are some of the largest of their type now in service. The Chicago, Rock Island, and Pacific has built six light weight stainless steel trains for fast passenger service. They are powered by 1200 h.p. diesel electric drives, and embody many of the most recent advances in car and locomotive design.

Coal Mining.—Electric locomotives have long been used in coal mines where they must necessarily be made small. In the past year one manufacturer succeeded in building a locomotive only 32 inches high, which makes it possible to mine economically thinner veins of coal than ever before. Another interesting use of electricity in mining is a cable railway for hauling coal down hill. The empty cars are pulled up hill by an induction motor. As they go down filled, the motor acts as an induction generator and so exerts a breaking action on the cars. The energy generated can be used to pull other empty cars up hill or for other useful purposes.

Trolley Cars.—To be able to compete with other means of transportation trolley cars in the future will have to be more comfortable and be able to keep faster schedules. With this in mind one manufacturer has developed a new light car with comfortably upholstered seats and better springs than those in the familiar street car. They have an acceleration of 4.75 miles per hour per second, which is nearly twice the usual value. These cars must also be able to stop quickly so they are provided with three kinds of brakes: dynamic braking by the traction motors, magnetic track brakes, and the usual air brakes. This type of car will be able to operate on a 30 per cent faster schedule than the one it replaces.

Ships.—Electric propulsion of ships proves economical wherever speed and ease of handling become important factors. A new 18,500 ton tanker built for the Atlantic Refining Company, will be able to make nearly twice as many trips between Philadelphia and Gulf Ports as the older tankers. It has turbo-electric propulsion, and also an electric welded steel hull.

TELEPHONY

Amplifiers.—One of the chief problems that faced telephone engineers at the beginning of 1937 was that of providing channels for the transmission of wider frequency bands. Nationwide broadcasts demand telephone networks capable of much more faithful reproduction of sound than is necessary for an intelligible conversation. The prospect of tele-

vision calls for the transmission of signals covering an even wider frequency band. To meet these needs more dependable amplifiers have been built for use in repeaters. These amplifiers are modifications of the feed back type developed several years ago. In order to fulfill the exact requirements of the amplifiers, new vacuum tubes have been developed. New wave filters were needed with better characteristics than those used heretofore. In these filters circuit elements have been used which involve piezo electric crystals. These crystals with their associated electric circuits make an electro-mechanical system which is equivalent to a pure electric circuit composed of resistors, capacitors, and inductors. However, the physical size of the crystal system, and consequently its cost, is so much less than that of the equivalent electric circuit that it is possible to build filters that would otherwise be prohibitively large or expensive.

The coaxial cable between New York and Philadelphia stepped out of the experimental stage for a while in the past year when some of its 240 circuits were used for regular toll service. The operation was entirely satisfactory. The cable was later removed from regular service for further experiments in the transmission of television signals. This cable is capable of transmitting a band of frequencies a million cycles in width.

New Telephone Devices.—In order to provide faster and more trouble-free telephone service many new devices were introduced in 1937. One was the use of a cold-cathode vacuum tube in subscribers sub-sets for more dependable ringing on four-party lines. Another was a device called a "tonlar" which makes a quick check of the condition of a telephone circuit between operations when it is in regular service. A constantly varying frequency is impressed on one end of the circuit and the response at the other end is recorded. If this response deviates from that which is normal for the circuit it is removed from service for repairs. In order to enable a subscriber to know how many times in a day his number was called and found busy, a special recorder has been developed. A study of records from this machine will enable the subscriber to decide whether or not it might be advantageous to install additional telephone service.

Call Registers.—In telephone exchanges there are registers which count every call which is completed through the exchange. Since there may be as many as 10,000 registers in a large metropolitan exchange, the problem of recording the readings of them all every month becomes a considerable task. This work has been lessened by a camera which photographs the dials of 25 registers at a time. The camera has a motor which advances the film and resets the shutter after each exposure. The films, after being developed, are sent directly to the accounting department, so no transcribing of their record is necessary. Since automatic telephone exchanges have been in use the switching action that connects two telephones in an exchange has always been accomplished by a device using sliding contacts. In order to avoid the wear caused by the sliding action and also to provide a quicker and simpler switch a new device known as a cross bar switch has been developed. The first group of these was put into regular service last year. It is an entirely new method of switching and the greatest recent advance in the design of automatic exchanges.

A foreign innovation of considerable interest is the automatic ticketing of calls which has recently been put in service in Belgium. This device prints on the same ticket the number of the caller and the number of the party called, the time of day, the duration of the call, and the tariff.

Sound Reproduction.—The development of methods of reproducing sound has always been closely allied with telephony. In the past year considerable improvements have been made in the recording of sound by magnetizing a steel tape. The tape is moved between the poles of a magnet the flux of which varies

in accordance with the sound. The remanent magnetism in the tape is a record of the sound and can be reproduced by a suitable instrument. This system has the advantage of making the record instantly available, without any elaborate processing as must be done in the case of a phonograph record. It is also easily possible to demagnetize the tape and use it over and over again. Another method of reproducing sound is by means of an irregular line such as the sound track on the film of a talking motion picture. A way has been found of printing a sound track on a paper tape. This has interesting possibilities such as the printing sound tracks of books read aloud, which could be used by the blind.

A sound reproducing system of great interest was installed in the past summer at Hollywood Bowl, a natural auditorium in California. This system is so powerful that voices of singers can be heard with pleasure a tenth of a mile away, and yet the reproduction is so true that the effect is not unpleasant nearer to the stage. The high and low frequency notes are separated by electric filters and reproduced by separate speakers especially suited to each frequency range.

For the treatment of Radio see below.

RADIO *

By Lewis M. Clement

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RECEIVERS

Electric and Automatic Tuning.—The feature which attracted probably the greatest public interest in the 1937 lines of radio receivers was automatic tuning. It appeared in various forms which can be divided into three groups. First, mechanical tuning in which the user is assisted in tuning by mechanical stops which are adjusted for the more important local stations. This system is found both with and without automatic frequency control. This latter feature adds a safety factor against drifting of the mechanical adjustments and is a safeguard against the receiver getting so far out of adjustment as to miss the desired stations with the automatic mechanism. Second, electric tuning in which a motor is used to drive the tuning control to pre-determined settings which are adjusted to bring in the desired local stations. Push buttons are provided to correspond with the desired stations. Third, push-button selection of pre-determined circuits which are set up by the service man to tune in the desired local stations. In this case the manual tuning condenser is disconnected for the automatic feature and in place of it are substituted the pre-set circuits selected by the push-buttons.

Cabinet, Dial and Other Special Features.—Sloping control panels, which have appeared from time to time in the past on various makes of receivers, have been considerably emphasized this year and appear in the models of several manufacturers. The use of large dials is continued and shows more variety among the various designs used. The feature of "spread band" for short wave reception, which has appeared in past years, is still popular, and one manufacturer has made this feature very convenient for the customer by having the 19, 25, 31 and 49 meter bands each cover the entire scale. This provides a

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spread of some 50 times the length of these bands as normally found in the conventional short wave range scale. To enable these receivers to retain their calibration with such a widely spread band, a special type of compensating capacitor has been developed. The provision of the weather band (150 to 410 kc) and of the ultra high frequency band is less evident among models this year than in the past few years. The use of special cabinet treatments to improve acoustic response continues to find favor as well as feed back and other special audio systems for improving tone quality. A considerable increase in the number of end table cabinets has been noted this season. Several manufacturers have introduced receivers which can be operated from either 6-volt battery supply or 110-volt power circuit source. These are provided for sale in rural districts where plans are under way for eventual electrification. They provide a receiver which will not be made obsolete by the coming of the power line.

Automobile Receivers.—The year saw a growing tendency toward the sale of automobiles in which a custom built receiver designed for the particular car is installed by the automobile manufacturer. The sale of separate automobile receivers has been somewhat decreased as a result of this. Mounting of receivers with speakers "speaking" through the instrument panel became popular in custom installations during 1937. No single outstanding improvement in performance but rather general refinement in over-all performance was made. At least one manufacturer has applied automatic frequency control with pre-selected switch tuning or push-button motor driven tuning. The advent of permanent magnet speakers comparable in performance with the electrodynamic type, results in a saving in drain on the car.

Phonograph Combinations and Records.—Both of these items have shown increased sales importance during this year. Several radio manufacturers have exhibited phonograph combination models for the first time and a general increase in public interest in phonograph reproduction has been noted. As a result, a considerable increase has occurred in the sale of phonograph records.

Receiver Tubes.—The tubes introduced during 1937 involved no principles that had not been used previously. The twenty odd new types that made their appearance embraced the extension of the directed electron beam power amplifier design to types suitable for specific applications and combinations or modifications designed primarily for specific circuits.

Sales Data.—Radio manufacturers were out early with their lines of merchandise. This encouraged sales throughout the summer which, in the past, has usually been quiet in radio sales. The following figures, quoted from *Radio Retailing,* show comparative sales of radio equipment for the years of 1935 and 1936. They are based on combined domestic and export sales figures.

Product	1935	1936
Radio Receivers		
Units Sold	6,106,800	8,825,000
Retail Value	$301,192,480	$503,025,000
Types on a Basis of Percentage of Total Units		
Table Models	48%	45%
Console Models	33%	39%
Auto Radios	19%	16%
Tubes		
Total Unit Sales	75,961,500	105,600,000
Retail Value	$50,135,000	$71,800,000
Records		
Total Unit Sales	Not available	32,000,000
Retail Value	Not available	$15,000,000

Noise Reducing Antennas—Home Receivers.—Special antennas and coupling circuits increased in popularity for broadcast receivers during 1937. Some designs were effective in materially reducing man-made electrical interference when the antenna was erected in a comparatively noise-free location. Interference coming into the receiver by way of the

power supply was also reduced by some types. One manufacturer introduced a distribution transformer whereby several rooms or apartments may be fed by transmission lines from one noise reducing antenna system.

Antennas for Automobile Receivers.—Practically complete disappearance of the original roof type antenna has resulted from adoption of steel top car bodies. Types which have been substituted include the use of insulated running boards, built-in rod type antennas and various forms of overhead rod types with loss of popularity of the under-running board type due to mechanical and electrical difficulties.

Private Inter-Communicating Systems.—A large number of these systems appeared on the market during 1937. They find greatest usefulness in homes, offices, stores, etc. There are two major types—those having interconnecting wires for carrying the communication and those in which the communication is carried by a radio "carrier" frequency over the lighting circuit wires from which each unit derives its power.

POLICE RADIO

Transmitters.—For state use the trend is toward several transmitters of 1 kw power so located as to give a 100% usable signal at all times anywhere in the State. General design and performance parallels that used for broadcast transmitters. Transmitters for point-to-point cw telegraph use are multi-frequency arranged for quick frequency change. Transmitters for mobile use operate in the ultra high frequency band and usually obtain power for operation from the car battery through a dynamotor unit. Equipment is usually located in the trunk compartment of the patrol car.

Receivers.—One of the major problems on receivers has been the elimination of ignition noise, particularly in the ultra high frequency band. Recent advances in receivers have included ignition noise suppression circuits and circuits to suppress the receiver output when the transmitter is off the air.

AVIATION RADIO

Transmitters.—The commercial airlines are now using 50 watt, crystal controlled pre-tuned aircraft transmitters for at least two frequencies in the 2500 to 6500 kc band operating from the conventional 12-volt d-c aircraft power supply system. The installation of transmitters on private airplanes increased during 1937. Due to recent Federal Communications Commission rulings, allowing the use of 3120 and 6210 kc, the newer transmitters are of three and four frequency pre-tuned, crystal controlled types having output ratings from 20 to 50 watts. Practically all aircraft transmitters are remotely controlled. The commercial airlines generally use 400 watt, crystal controlled, multi-frequency, pre-tuned transmitters either remote or directly controlled at their various ground stations. Fifteen watt, 278 kc transmitters are being used for traffic control direction at all major airports. The radio range systems are established by transmitters varying from 150 to 1000 watts at frequencies between 200 and 400 kc. The Bureau of Air Commerce is now engaged in an extensive expansion program of the present Navigational Aids.

Receivers.—The commercial airlines are now all using (a) crystal controlled communication aircraft receivers operating on their company frequencies, (b) a continuously variable radio beacon and weather broadcast receiver and (c) an auxiliary continuously variable two-band receiver covering their communication frequencies as well as the radio beacon and weather broadcast frequencies. In addition they have recently installed an electrostatically shielded, rotatable loop antenna system working into either the regular or the auxiliary beacon receiver for use during periods of precipitation static which made reception generally impossible in the past. Radio compasses are in use to some extent, acting as an auxiliary receiver as well as a means of reception during precipita-

tion static. The Bureau of Air Commerce passed regulations effective Nov. 1, 1937, prohibiting other than "contact" flying on the Federal Airways unless the aircraft is equipped with two-way radio equipment. This means that very little cross country flying will be done except by two-way radio equipped planes. Due to the great amount of radio interference generally existing around airports the trend is towards the use of crystal controlled remotely operated ground station receivers. The receivers are located at relatively quiet receiving locations from two to 10 miles distant from the airports.

AMATEUR RADIO

Amateur radio has continued to contribute to the radio art. Many of the circuits and designs, which the amateur pioneered, are now finding application in entertainment fields and are assisting in the saving of life. For example, band spread tuning and stabilized oscillators with a high degree of calibration accuracy are finding extensive applications in home receivers. As a result of the importance of amateur emergency communication as demonstrated in the flood of 1936, a more closely organized network of much broader scope has been developed this past year.

DIRECTION FINDERS

Radio direction finders continue to be of the utmost importance to the safety of passengers and crew both at sea and in the air. Increased popularity of air transportation has stimulated the development of direction finders for use in connection with aircraft. Three general methods of locating an airplane are quite universally used. The first consists of a special type of transmitter which establishes a radio air lane. Sufficient of this equipment had previously been installed by the Bureau of Air Commerce to establish lanes covering practically the entire United States. These installations were markedly improved during 1937. Additional equipment was provided to secure greater reliability and freedom from interruption of service, and ultra high frequency marker beacons are being added more accurately to determine the location of the landing field itself. The second method involves taking bearings on a plane's transmitter from two or more ground station direction finders and advising the plane of its position by radio. The third method involves direction finding apparatus on the airplane itself. Apparatus has been developed which gives the pilot an aural indication while other types provide a meter which points to the right or left depending upon his direction of flight with respect to the transmitting station. The developments outlined above have added tremendously to the safety of air travel and have made possible the use of airplanes at night and under weather conditions which were previously prohibitive.

AUTOMATIC SOS ALARM

For many years the need for an automatic device to maintain watch for SOS signals has been recognized. In 1927 the Radio Telegraph Convention in Washington set up certain technical standards, and in 1929, the International Convention for the Safety of Life at Sea issued a ruling requiring all cargo vessels of over 5,500 tons gross tonnage to maintain continuous watch for SOS signals. Early in 1937 samples were submitted for approval to the F.C.C. by two manufacturers. One type uses a superheterodyne receiver, operates on cw, icw, or spark signals, times the signals electronically, and counts dashes through a notching relay. The other uses a t-r-f receiver, operates only on icw or spark signals, times the dashes by a motor driven cam-clock, and counts them by a series of interconnected relays. Both have essentially the same "intelligence" and have been approved by the F.C.C. as meeting the requirements of the Safety Convention.

COMMERCIAL FACSIMILE

The ultra high frequency relayed facsimile circuit between New York and Philadelphia has been continued in service on an experimental basis. This system consists of a multi-channel two-way 3-meter circuit relayed by

unattended receiver and transmitter stations at New Brunswick and Arney's Mount, N.J. The transmitters at the relay station are arranged to turn on or off automatically when the transmitters at either end are started up or stopped.

TRANSMITTERS

Broadcast Transmitters.—During 1937 there was a continuance of the trend toward higher fidelity which resulted in the commercial application of degenerative feed-back. As the name implies, part of the output voltage is introduced at the input in such phase relation as to reduce the gain of the amplifying system. The unwanted components, such as spurious harmonics and noise, which do not appear on the input, are reduced in proportion to the reduction in gain. There has been a definite improvement in the overall efficiency of high power broadcast transmitters. Factors which have contributed to this are the introduction of the Doherty principle, the continued improvement of high level modulation and the above mentioned feed-back applications.

Commercial Transmitters.—An outstanding accomplishment of the year was the completion of a 200 kw short wave telegraph transmitter now being used in regular trans-Atlantic commercial service.

Broadcast Speech Input Equipment.—Broadcast speech input equipment saw a continuous and steady advancement during 1937. The availability of many new materials contributed to this. Among the new materials, the use of Alnico magnet steel doubled the sensitivity of the velocity type microphones. The use of Mu-Metal in the construction of transformers greatly improved their performance and freedom from hum pickup. New volume indicator circuits, having high speed upward action with slow return, were incorporated in individual units and in combination with line amplifiers, to aid the studio operator in keeping better program control. A high fidelity monitoring speaker having a wide frequency range and mounted in a closed cabinet was available for the first time.

Transmitter Tubes.—Activities in the development of tubes for ultra high frequency were stimulated in 1937 by the increasing needs for television, facsimile, sound broadcasting, aviation and police. The design of the tube and its circuit are very closely linked at these frequencies since the tube elements themselves form a substantial part of the circuit. A miniature water-cooled tube was developed similar to the conventional double-ended water-cooled triode but much smaller (seven inches long by 1¾ diameter, including water jacket). As an amplifier, this tube can develop 500 watts at 300 megacycles. New air-cooled tubes were also developed for high frequency operation. One tube of this type can develop 400 watts as an amplifier at 100 megacycles. For low powers, a double pentode was introduced in 1937. The elements are internally shielded to prevent reaction and the filament is internally by-passed to the screen. This tube develops 10 watts at 150 megacycles. The application of the beam principle to transmitting tubes was a substantial advance in 1937. For transmitters with ratings of 5 or 10 kilowatts, the complications of a water cooling system have been eliminated by the use of an air-cooled jacket into which a standard 10 kilowatt water-cooled tube is soldered.

Transmitting Antennas.—In order to meet commercial demands for greater broadcasting coverage and more powerful stations, increasingly elaborate antenna systems found general use for broadcasting stations during 1937. Directive arrays were used to permit increased power and closer frequency assignments without interference, and advanced methods in design pushed back the selective fading wall, resulting in greater coverage without increase in power. The vertical radiator or tower antenna has practically superseded the flat top antenna in the broadcast field.

Crystal Development.—The application of low temperature-coefficient quartz crystals for controlling the transmitter frequency has become

almost universal. A study of the orientation of the quartz crystals blank resulted in the determination of certain angles at which the frequency of the blank varied less than two parts per million per degree centigrade instead of the usual 40 to 50 parts per million. This development has resulted in a remarkable improvement in frequency stability. Furthermore, the study of quartz has made it possible to provide crystals for frequency control up to 20 Mc with practically the same power output and stability as for lower frequency crystals.

NEW F.C.C. REGULATIONS

As a result of public hearings, cooperation of industry groups and study by Government organizations, regulations were issued by the Federal Communications Commission late in 1937 covering the use of frequencies from 30 to 300 megacycles. This allocation by the Commission opens up, on a more or less permanent basis, a new field of radio frequencies which will provide for many new services, such as television, high frequency broadcasting, two-way police, forestry, etc. It makes these frequencies available for commercial use and the commercial development of services which have previously been determined to be practical by the use of these frequencies for experimental purposes. It, in fact, starts a new era in radio development. This important regulatory plan will do much to assure a systematic and orderly development of radio services in this frequency range. To permit wider application of radio for police use the F.C.C. has made available two additional groups of frequencies. One group, comprising nine frequencies in the medium high frequency band is for cw telegraph communication between fixed points and the other group, comprising 29 frequencies in the ultra high frequency band, is for voice communication between fixed and mobile units. These are in addition to the two groups of voice frequencies in the medium high frequency band used for communication to mobile units.

INTER-AMERICAN RADIO CONFERENCE

At the invitation of the Cuban Government, representatives of Canada, the United States, Mexico and Cuba held a preliminary conference on Radio in Havana, March 15–29, 1937. At this conference the ground work was laid for a Pan-American conference which was held in Cuba from Nov. 1 to Dec. 13, 1937, at which representatives of all the North American and many Central and South American nations were present. Fourteen nations of the Americas signed the "Inter-American Radio Convention" which forms the basis for co-operation among the Americas on all radio matters. Argentina did not sign this Convention but all the other principal nations of North, South and Central America did sign. In addition to the Convention there was signed an "Inter-American Arrangement Concerning Radio-communications" which had to do primarily with the allocation of frequencies to various classes of service between 10 and 300,000 kc and related matter. The conference also sent resolutions to the Cairo Conference which was held beginning Feb. 1, 1938. These resolutions will become proposals of the nations of the Americas to the Cairo Conference.

The most important document of the conference was the "North American Regional Broadcasting Agreement," a treaty signed by Canada, Cuba, Mexico, United States, Dominican Republic and Haiti, which makes an allocation of the broadcast frequencies between 550 and 1600 kc. This will serve to eliminate the chaotic condition which now exists in the assignment of frequencies in certain of the nations and thus relieve the broadcasting industry of the United States of a large amount of interference. This agreement becomes valid when it is ratified by Cuba, Canada, Mexico and the United States, and becomes effective one year after the fourth ratification. This is the first time that all nations of North America have had an agree-

ment, although the United States and Canada have had an agreement concerning the use of frequencies since the early days of radio broadcasting.

BROADCASTING STATIONS

As of Oct. 1, 1937, the broadcasting stations in operation and authorized in the United States were as follows:

Number of full time clear channel stations (number of 50 kw — 27)* (number less than 50 kw — 6)		33
Number of full time regional stations		192
Number of full time local stations		186
		411
Number of part time stations:		
50kw	6	
25 kw	1	
20 kw	1	
10 kw	8	
5 kw	24	
2½ kw	8	
1 kw	47	
500 w	39	
250 w	48	
200 w	2	
100 w	77	
50 w	2	
Total part time stations		263
Total stations		674

*One of these stations is authorized to operate on 500 kw experimentally.

SHORT RADIO WAVES

Investigators have continued to push back the radio frontier in the direction of waves beyond the so-called short and ultra-short waves. A major objective has been the generation of more power at shorter wavelengths. Five to ten watts at wavelengths of the order of five centimeters (6,000,000,000 cycles per sec.) measures the progress attained in 1937.

TELEVISION

Experimental Tests.—Television research continued during the year on an experimental basis but on a broader front. Field tests were in progress, notably in New York, in which television systems were tried on a full scale operating basis. The experience gained from these tests assures that television will mature into practical form prior to commercial introduction to the public. Experimentation was based on standards of 441 lines, 30 frames per sec., and interlaced scanning. Much progress has been made by industry groups in formulating standards for operation, and this cooperative activity continues. Television program production—a most important matter—has begun to receive serious study and experimental effort. Electronic methods of transformation at the studio and at the receiver are now used almost universally. Progress during the year included more sensitive studio pickup tubes and larger receiver reproducing cathode ray tubes. Reproducing tubes showing black and white images have come into general use. Work was continued on projection images from cathode ray tubes, and public demonstrations were given of 3-by-4 foot pictures.

Television Transmitter Developments.—A complete commercial television transmitter operating on frequencies in the vicinity of 50 megacycles was developed during 1937. Identical radio frequency channels for video and audio develop powers of 30 kilowatts during modulation peaks. A relay transmitter delivering 400 watts at 120 megacycles was also developed. Another television transmitter developed during 1937 was an equipment to deliver four kilowatts during modulation peaks on a carrier frequency of four to 90 megacycles.

Electron Multiplier.—The most efficient multiplier heretofore depended for its operation upon the use of both electric and magnetic fields which made its adjustment rather critical. During the year a multiplier was developed which did not require a magnetic field and, at the same time, retained all the desirable features of the earlier design. Simultaneous with this development there was considerable progress toward the design of a grid controlled multiplier.

Image Tubes and the Iconoscopes.—The image tube—an electron optical arrangement for producing an electron reproduction of a light image—was improved with respect to its sensitivity, color response and resolution. The most important application of this device has been as a means of increasing the sensitivity of the iconoscope. This is accomplished by projecting an electron image of the object to be televised

onto the mosaic of the iconoscope and taking advantage of the secondary emission intensification obtainable in this way.

Projection Kinescope.—Much progress has been made toward the perfection of this type of tube, the most important advances being the result of development of a new type of electron gun, constructions capable of withstanding high voltages, and improvements in fluorescent screen materials.

RADIO TEST EQUIPMENT

In 1937 a cathode-ray oscillograph was developed which contained wide frequency range, high gain amplifiers for both deflection axes. Although designed primarily for use in television studies, the equipment has found other applications. A new type of cathode-ray tube providing three electron beams allows the simultaneous observation of three phenomena on a single screen. A wide frequency range beat frequency oscillator was developed, also primarily for television studies. The trend in service measuring equipment was toward higher sensitivity meters, so that the circuit being checked is less disturbed. Conventional continuity meters of 20,000 ohms per volt became available, and an electronic continuity meter having a sensitivity of 50,000,000 ohms per volt was introduced. A general purpose vacuum-tube voltmeter was produced which has flat response up to very high radio frequencies.

TECHNICAL ADVANCES IN SOUND FILMS

By Lewis M. Clement

Vice President, RCA Manufacturing Company Inc.

35 MM. REPRODUCING SYSTEMS AND ACCESSORIES

The year 1937 brought steady improvement and refinement to all components of the 35 mm. sound picture reproduction system. A number of new designs of soundheads were developed and existing designs improved. Increased constancy of film motion was attained by such devices as the kinetic scanner, oil-filled rotary stabilizing dynamic flywheel, etc., replacing the former sound gates. Starting characteristics were improved by use of motor flywheels and other means. Several new designs included unique designs of push-pull optics for reproduction of the new push-pull recordings. Combined sound and picture projectors were appreciably improved, resulting in increased use in the portable, semiportable and small theatre fields. Faders or sound changeover systems were of diversified design to meet any requirements. A number of designs provided for pre-selection of volume level to eliminate differences in loud speaker sound level at the changeover period. Improvement in the power handling capacity and the distribution and frequency characteristics of both low frequency and high frequency components of the generally adopted two-way loud speaker systems, resulted in greatly improved fidelity of reproduction. Diversified associated developments and equipments appeared on such subjects as auditory perspective, color pictures, panorama effects, etc.

16 MM. AND 8 MM. REPRODUCING SYSTEMS AND ACCESSORIES

Progress in the 16 mm. field kept pace with that on 35 mm. Equipment in general was improved sufficiently to produce sound quality comparable to 35 mm. Many new sound picture projectors were introduced. The picture quality was improved by newly designed optics and general use of higher intensity projection lamps of 750 watts to 1,000 watts. Fidelity of sound was improved even more by the use of high quality sound optics and the application of 35 mm. principles in obtaining constant film motion. Increased size of audiences was made possible by the use of higher powered equipment, several designs providing

up to 40 watts amplifier output. The greatly increased picture and sound capacity, outlined above, resulted in wide application of this equipment in the industrial advertising field and the educational field, to the almost total exclusion of the more expensive 35 mm. portable equipment. The development of 16 mm. for home and small theatre entertainment, however, did not progress appreciably, due to the expense of the equipment and films to the average user, and the small film library available. Although the use of silent 8 mm. equipment increased appreciably, very little development was done with it on sound.

SOUND RECORDING

In the field of sound recording there has been a decided improvement during 1937 in the product as supplied to the theatres. This is due both to the increased care in the handling of the recording equipment and the processing of the film and to the new and improved apparatus made available during the year. The widespread use of ultraviolet light in recording and in printing has resulted in cleaner, sharper sound tracks, increased high frequency response, and wider dynamic range through a reduction in background noise. An increased use of Class "A" and Class "B" push-pull recordings has been made, particularly on musical selections. The squeeze track has also been used in a number of pictures to increase the volume range. The non-slip printer has, to a large extent, eliminated the printer losses due to slippage caused by differences in shrinkage between the negative and the raw film. Optical reduction printers making 16 mm. sound tracks from 35 mm. originals are giving excellent results. An increasing amount of the equipment is being operated from a-c power supply sources. This includes self-contained a-c equipment in much apparatus of new design and power supply units for furnishing rectified and filtered power to equipment designed for battery operation.

Microphones have been improved in sensitivity, reduced in size, and one having uni-directional characteristics has been made available. These provide improved facilities in sound pickup work. Monitoring headphones having a frequency response comparable to monitoring speakers have resulted in their general use in monitoring at the scene of action. Volume-indicating devices have been improved. Meters of the high speed type are in general use. A neon type volume indicator having an operating range of 45 db has proved an excellent device, particularly for recording musical selections and in general re-recording service. A portable recording equipment for location use has made its appearance. This provides the necessary portability and yet retains the same high standards of performance found in studio type equipment. A trend toward stage mixing has been noted. This is made possible through the use of high fidelity monitoring phones and has resulted in mounting mixers, volume indicators, pre-amplifier equipment, etc., in consoles which can be wheeled within full sight of the scene of action. This permits the mixer to do a better job since his view of the action allows him to anticipate changes to be made in volume level or in the mixing of his microphone circuits.

PUBLIC ADDRESS EQUIPMENT

Numerous improvements in sensitivity, fidelity and appearance have been incorporated in the 1937 microphones. Improved air-tight housings for crystal microphones have contributed much to their life and dependability. A new type of signal mixing equipment which accomplishes results similar to the conventional high level mixers was recently placed on the market. This system operates by varying the mutual conductance of the input amplifier tubes, the plates of which feed a common high impedance signal channel. The volume controls vary the grid potentials of the amplifier tubes and may be located at almost any distance from the amplifier without using shielded wire. This circuit provides a wide range of control without introducing any appreciable dis-

tortion. The introduction of the beam power pentode and the application of inverse feedback has made possible very efficient power amplifier designs with very low distortion and good output voltage regulation. Some amplifiers now contain volume compressors and expanders; the former to maintain more constant level of the output and the latter to compensate for the volume compression which is present when reproducing recorded music. The most noteworthy advance in the public address field has been accomplished in the improvement of high powered loud speakers. A new 60 and 100 watt dynamic loud speaker unit with permanent magnet field and directional horn is now available which covers the range from 120 to 7,000 cycles with excellent fidelity and high efficiency.

AUTOMOTIVE ENGINEERING

By Austin M. Wolf

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GENERAL

New types of gear shift control together with the introduction of an automatic self-shifting transmission, represent the outstanding developments of the year. Other important contributions are the development of a new 16 cylinder engine with the cylinder banks at an angle of 135°, a flywheel with a flexible web member, a piston for overhead valve engines creating turbulence, a clutch incorporating a diaphragm spring member replacing the previous individual coil springs with their levers and attendant parts, the use of coil springs for the rear suspension, a rear suspension system in which the shock absorbers relieve the springs partly of braking and starting torque reaction, rayon fabric tires and the increasing use of the rear axle transverse stabilizer link. Grilles, sheet metal work and body lines have introduced new types of styling.

A few of the manufacturers have reduced their number of models, simplifying manufacture and maintenance in the field. A number of cars have increased the wheelbase, enabling them to give more leg room. In a few instances, the instrument boards have been shifted ahead, permitting the front seat to be moved likewise to bring the operator nearer the windshield for a better view. Frame width and rear axle treads have been made wider. One manufacturer is able to use one basic chassis with the same wheelbase for two distinct power plants in that the longer one, being almost flat, can be disposed so that it extends partly under the toe-boards.

ENGINES

The outstanding engine development is that of the 16 cylinder unit with a 3¼-in. bore and stroke, giving a displacement of 431 cu. in. With a 7 to 1 compression ratio it develops 185 hp at 3600 rpm. With the 135° V-angle the engine is very low and therefore has a considerably lower center of gravity than the conventional. A power impulse is obtained with every 45° of crankshaft rotation, giving a practically continuous flow of power.

Overhead valve engines have suffered from lack of turbulence, and by ramping the piston head upward to a point approximately ⅛ the distance across its diameter from which point it again slopes downward, turbulence is induced at the end of the compression stroke and the greater portion of the charge is concentrated near the spark plug. The resultant shape of the combustion chamber simulates that of the L-head engine in the disposition of the volume and the ability to control the temperature of the last portion of the charge that ignites. The new piston has made it possible to raise the compression ratio and as a result the power output. Some of the manufacturers have made slight increases in

either the bore or stroke to raise the displacement and power output.

In the case of two manufacturers, there has been a slight recession of extremely high compression ratios. The aim was to provide an engine that would run on ordinary fuel without having to resort to premium fuel.

CYLINDER, VALVE GEAR AND PISTON

To prevent distortion, one engine head is secured to the cylinder block by 33 studs as compared to 20 in the previous design. The self-adjusting hydraulic tappet has been adopted by more manufacturers. The tin-plated autothermic aluminum alloy piston that was introduced on one model last year is being used in increasing numbers. There is a general trend in piston ring combinations toward narrower compression rings and wider oil rings. One ring manufacturer has developed an iron and manganese-phosphate coating to eliminate hot and cold scuffing. One maker is using electric furnace molybdenum iron for the top compression rings in his engine.

CONNECTING ROD AND CRANKSHAFT

The 16 cylinder engine previously referred to is provided with a 2-in. crank pin which permits the withdrawal of the rod and piston from above without the necessity for an angle split big-end bearing. The short stroke reduces the inertia forces of the reciprocating parts and with the lighter individual power impulses, the 2-in. pin gives ample rigidity and reduces rubbing speed.

The new "syncro-flex" flywheel cuts down noise by suppressing vibration due to periodic crankshaft bending at critical speeds. The cast iron flywheel rim is attached to the crankshaft by a steel disc acting as a web which is rigid torsionally but flexible in bending. Damping plates are located on each side of the web and are secured with it to the crankshaft flange. The plates do not extend to the flywheel rim but near the outer periphery there are six bronze washers located between the web and the plate on each side, all being held together under spring pressure which maintains the assembly in frictional contact. This construction allows the rim to run in a truer circle regardless of crankshaft deflection. There is an increasing use of asbestos seals for the rear main bearing. One manufacturer provides a leather seal with a coiled tension spring around the hub of the harmonic balancer being located in the front crankcase cover.

The oil filler on the overhead valve engine of one series of cars is located at the top of the rocker arm shaft cover to permit filling from either side and to give greater accessibility in view of the bolted-on hood side panels. The new 16 cylinder V engine places the oil filler in the center of the front valve chamber cover for the same purpose. The floating oil inlet to supply the pump with the top layer of the crankcase oil has been incorporated in further models.

COOLING SYSTEM

There is a trend toward larger fans with a decreased rotative speed for silence. Radiator cores have been increased in capacity in a number of instances in order to overcome the slight restriction of the radiator grilles. In view of the turbulent flow of air passing through them, straightening vanes are invariably used and one manufacturer runs the vane to the radiator core which has the further advantage of preventing light passing horizontally through the grille and destroying the effect of an otherwise beautiful design.

Water pump seals by the use of a synthetic rubber-carbon block combination are more widely used. One manufacturer uses a synthetic rubber and cork combination. The 16 cylinder V engine has two independent circulating systems and the two water pumps are rotated by a quadrangular double V belt drive. One manufacturer of a small delivery truck is equipping it with steam cooling, the condenser unit being placed above and close to the roof.

FUEL SYSTEM

In a number of instances a vacuum actuated econimizer in the carburetor replaces the former type actuated by

a throttle. The mixture is enriched whenever required, even though the throttle be not fully open. At the same time the fuel flow increases at small manifold depressions, enriching the mixture whenever the engine is pulling, regardless of throttle position. This makes possible the use of a leaner mixture for light load operation with a resultant economy.

The carburetors of two automobiles with automatic transmissions provide a richer mixture during gear changing intervals due to the engine speed dropping slightly with an open throttle. One manufacturer provides an oblong piece of rubber impregnated fabric between the throttle rod and the accelerator lever which eliminates any backlash in the connections as well as insulates the pedal and car interior from noise and heat. The automatic chokes for a number of carburetors are now mounted directly on them instead of the previous detached position usually on or near the exhaust manifold, eliminating the previous linkage. One truck manufacturer has equipped his truck with a super-charger for operation in the Andes Mountains where an elevation of 13,000 feet is reached. The supercharger runs at 1.75 of engine speed and at 1800 rpm of the engine delivers 512 cu. feet of air per minute against a pressure of 5.8 lbs. per sq. in. which equals sea level pressure at the elevation noted.

ELECTRICAL SYSTEM

Wider gap spark plugs are being used in order to obtain more satisfactory operation at high speed and also to make the plug less sensitive to the normal burning away of the points. Generators have been stepped up in output through either improved ventilation or rotation at a higher speed. An increasing use of voltage regulation is to be noted and an output of at least 25 amperes prevails on even the smallest cars. The 16 cylinder V engine rotates its generator at 1.95 of engine speed. The dual belt fan pulley drive is used to operate it, there being a rubber ring at the rear inner portion of the fan pulley against which the generator's smooth faced driving wheel is pressed. The fan-pulley combination is mounted on a bracket so that adjustment of the V belts can be made and the generator front cover is secured to the fan mounting bracket with a similar adjustment to control the frictional contact between the rubber ring and the driving wheel.

There is a considerable increase in the use of under-hood mounted batteries. For this purpose, a long thin end-to-end unit has been developed in which there are short connecting links recessed in the cell covers and sealed over wtih wax to guard against accidental short circuiting. The starting cables are considerably shortened in length in view of the close proximity of the battery to the starting motor. One manufacturer provides a duct which admits cool air to the battery compartment. Another manufacturer offers a battery filler in which a bottle holding distilled water is mounted on the dash, one for each cell. A supply and vent tube runs between them. A ready check of battery condition is possible since a rapid drop of water in one bottle would indicate trouble in the corresponding cell. Sufficient acid from the battery will rise to the reserve bottle through the vent tube, thus preventing freezing of the distilled water supply.

CLUTCH

A novel idea in clutch design consists in the employment of a diaphragm spring having, when in a free position, the shape of a dished washer with 18 integral inwardly pointing fingers. When the clutch is engaged the fingers are flat and the entire rim of the spring bears against the pressure plate, giving a more uniform load distribution than in the case of the conventional coil springs. Pressure of the throw-out bearing on the inner ends of the fingers causes a cupping action which effects the release. Round wire rings are provided at each side of the diaphragm to act as fulcrums. A further advantage of the construction is that the pressure decreases during the pedal stroke in place of the normal build-up. The lighter construction reduces the effective fly-

wheel weight, permitting more rapid acceleration. There is an increasing use of the semi-centrifugal clutch. To decrease the spinning weight, one manufacturer uses a lesser number of vibration-dampening springs in the driven clutch plate. The spring wire size has been increased as well as the length of the slots in the plate in order to carry the engine torque with fewer springs. Due to the smooth flow of power in the 16 cylinder V engine, no dampening springs are required. A baffle pressed into the clutch pressure plate on several cars reduces the possibility of oil or water reaching the disc surfaces. A grooved facing is used by one manufacturer to aid cooling and at the same time to break any possible vacuum that might exist. The clutch pedal assist spring introduced in 1936 is now used on several cars. This consists of an over-center return spring.

TRANSMISSION

The automatic self-shifting transmission offered on two automobiles consists of a single reduction planetary unit in series with a double reduction set so that either of four ratios is available. A sliding gear unit is placed ahead of the planetary system to take care of reverse. Each of the two planetary bands is tightened by a nest of coil springs which are compressed to free the drums by an hydraulically operated piston when it is desired to obtain direct drive in the particular planetary unit. This operation also actuates the direct drive multiple disc clutch of the unit. A selector level under the steering wheel has four positions: reverse, neutral, low range and high range. The clutch is used only in starting and with the selector level in the low range, the car moves forward in first gear. At approximately 6 mph the transmission automatically shifts into second. At any speed above 6 mph, should the selector level be moved manually to the high range, a shift to third is made without disengaging the clutch and at 23 mph or higher, 4th speed or direct is engaged. For fast acceleration or added hill-climbing ability at any speed between 23 and 55 mph, complete depression of the accelerator pedal brings third speed into action until a speed of approximately 55 mph is reached, when direct is engaged. Besides the control imposed by the selector level, a centrifugal governor and a connection with the throttle actuates the hydraulic control. Pressure for the latter is built up by a double pump driven from the mechanism ahead of the reduction gearing.

Gear noises are suppressed with remote control since the conventional lever is absent to telegraph them into the passenger compartment. The "electric hand" control continues but is now provided with a mechanism causing the selector lever automatically to return to neutral should there be an abuttment of the gears in going into low or reverse.

Three makes of cars are provided with a gear shifting lever under the steering wheel, projecting to the right. Rocking the lever end parallel to the steering column corresponds to the across-neutral movement of the conventional lever. Shifting the lever ahead or backward in a plane parallel to the steering wheel causes the shifting of the gears. In one system, two concentric tubular shafts are located ahead of the steering column and almost parallel with it. Rocking the shift lever across neutral results in the picking-up of one of these tubes. Below the toe-board, each carries a lever from which a shifter rod runs to a lever on the transmission. An oscillating shaft takes the place of the previous axially shiftable rod. In the second system, a single tube is used which also parallels the steering column. Fore and aft movement of the shift lever causes shifting of the gears by means of a lever at the base of the tube and a single connecting rod to the transmission. The shifting lever is pivotally mounted on a bracket welded to the tube and when it is rocked across neutral it raises or lowers a rod within the tube. This rod actuates a selector plate in the transmission through a flexible cable connection so that the shifting movement of the hand lever is imparted to one of the two shifting yokes.

Three other makes of cars are using

a new type of vacuum gear shift. A miniature shift lever is located slightly to the right of the steering wheel and just below the instrument panel. Rocking the lever across neutral controls a valve that actuates a vacuum diaphragm at the transmission to operate the cross-over between the two shift rails. Sometimes this function is done mechanically. A cylinder normally submerged in vacuum does the actual shifting of the gears. Movement of the shift lever fore or aft determines on which side of the cylinder air will be admitted.

By locating the transmission countershaft in a horizontal plane with the main shaft and locating the shift rails and forks to one side, it has been possible to drop the floor level in the front compartment or to avoid the hump that is sometimes used. Ground clearance is also increased.

AXLES, BRAKES AND TIRES

The hypoid rear axle has made further ground. Wheel bearings have been moved outward to reduce overhang and rear axle treads have been increased either to provide a greater clearance at the wheelhouse to permit tire oversizing without interference or to increase the rear seat width. A manufacturer using an extensible torque tube construction has provided a welded-on bracket at the front side of the axle housing at each side and into which fits a lug on the spring seat. A rubber bushing and washers at each end insulate the lug from the bracket and its bolt, thus providing cushioning and noise insulation.

Brake drums have been increased in rigidity and brake shoes have been made heavier and stiffer. Ventilating slots in the wheel as against a solid disc are being favored to provide air for quicker drum cooling. One line of cars is provided with a pistol-grip hand brake level under the dash to the right of the driver where it can also be reached by the front-seat passenger in case of emergency. A new type of hand brake sector has been introduced which is pivotally mounted on the brake rod clevis pin and tied by a link to the frame bracket. This causes the sector to move in the opposite direction to the lever and gives a smaller angular movement of the lever from tooth to tooth.

Tires show no radical changes, there being a tendency to use a ribbed thread for quieter operation. Rayon fabric has been developed for truck and bus service. The single yarn is made into a four-ply strand, three of which are cabled to form a cord which is about 12% lighter than the standard cotton equivalent. It is treated by a special solution to bond it with the rubber. Higher tensile strength at elevated temperatures is obtained and tests have shown a considerable increase in mileage.

SUSPENSION

The use of coil springs at the rear reduces unsprung weight and eliminates interleaf friction of the conventional spring together with shackle members and need of their lubrication. The spring is located at each side on a bracket extending back from the axle and rests at the top under the frame. The axle is held fore and aft by a rigid torque member and transversely by a stabilizer link running from a bracket on the frame to one on the axle housing. A large direct acting shock absorber is used which plays an important part in the system. One manufacturer provides cupped depressions at the end of each spring leaf, some containing buttons of rubber and the others oil-impregnated bronze. Interleaf friction is thus minimized. A two-way lever type shock absorber is mounted on the axle so that the arm of the left unit projects to the rear while that of the right projects to the front. A sway eliminator bar is offset at the right where it is bolted to the shock absorber arm and at its left side it is bracketed in an axle-mounted rubber bushing. The shock absorbers come into play when the axle housing is subjected to braking or starting torque. In partially relieving the springs of this duty they can be made more flexible. A transverse stabilizing link is incorporated in this system in view of the use of large rubber bushings at the spring

eyes. A considerable number of cars are now using the stabilizer.

FRAME

One manufacturer who used the I-beam X-member has now replaced it with a channel construction. Another uses an X-member in which the members are straight and telescope each other at the center. Each unit of the X-member is made in two parts, overlapping each other at the center where the channel web adjacent to the center opening is offset to a central plane. At the center the two halves of each straight member are riveted and welded together as well as to each other, resulting in an I-beam center with the "flanges" in the form of a closed hollow V, increasing the moment of inertia. Key-welding is used throughout this frame.

CONTROL AND EQUIPMENT

The roller-tooth steering gear is widely used. One manufacturer who provided a short and long drag link between the steering gear pitman arm and the wheel spindle arms has now placed an idler lever at the right, located in a symmetrical position with the pitman arm and with a connecting link between the two. In this way, exactly equal steering action is provided for both front wheels. Another manufacturer with individual front wheel suspension has eliminated the center frame-mounted idler lever by running a drag link directly from the pitman arm to the right knuckle arm. The link running to the left arm extends to a ball and socket joint in the right drag link a short distance to the right from the pitman arm ball stud. Several cars rubber-mount the steering gears in the frame.

The headlamps on two cars are built directly into the fenders. In one case the lamp lens is wholly contoured within the fender outline. Many manufacturers are now placing the headlamps directly on the fender crown or apron. There is an increasing trend toward the tail lamp at the termination of or above the body belt moulding. More makes are locating the license-plate lamp and bracket at the center of the trunk lid.

Instrument panels are being made of plastic material. In one case the instrument unit is raised from the dash ahead of the steering wheel and has a large protruding circular speedometer dial while the light switch is located at the left end in the form of a rotatable knob. This is balanced at the left end by a similar knob controlling the radio when installed. Defroster slots are narrower and built into the garnish moulding nearly the full width of the windshield for better warm air distribution.

GRILLES AND SHEET METAL

Grilles have been made straighter in order to afford a longer hood and the bars, being less in number, are spaced further apart. Die castings are used in a greater number of instances and often the grille is made in two sections so that in the event of accident the replacement will not be so costly. Often the bars are individually cast. The horizontal bar design is used by all but one make.

A front apron running from the fender crown to the grille cuts off the former lower portion of the grille on one series of cars. A similar effect is obtained in another make in which the fender apron closely follows the curvature of the front portion of the crown to give a V-effect at the base of the grille. In one make the front portion of the fenders leans forward and the same line is duplicated by the radiator grille which rises to meet the rounded hood top. A large duct in the front fender skirt to carry off the heated air in the engine compartment is provided in one series of cars. The alligator type hood is used by more cars, although two makes that previously incorporated it have changed to a hinged top with the side panels bolted in place yet easily removable. No louvres are used in the hood sides of one design, the louvre opening being concealed in the bottom of the extension of the body moulding along the hood.

BODY

Bodies are generally lower and wider and in some instances longer. Wind-

shield openings have been made higher for better visibility. The V-windshield has found further adherents. A new ventilating unit contains an air filter, a motor driven fan and a hot water heating element which is connected with the cowl ventilator through a stack in which the greater part of the air moisture, whether rain or snow, is removed through a drain-pipe. Pressure is maintained within the body to prevent the ingress of cold air in winter. The rubber-mounting of bodies is increasing.

One manufacturer provides a chromium belt moulding which starts at the front of the radiator grille and is carried back to the trunk. The door handles are on the same line as the moulding and blend into it. The same manufacturer is the first one to use in production concealed door hinges. The hinges for the trunk compartment are also concealed, thus preserving a clean exterior.

Heat and sound insulation have made rapid strides. One manufacturer utilizes 11 combinations of eight different insulating materials other than carpet, interior lining and dead air space on his lower priced cars and 17 combinations of these materials on the higher priced line. The materials comprise jute, printed jute, asphalt composition board, asphalt composition spray, wood composition board, 26-ply crinkled fibre, insulation fibre and rubber. One manufacturer utilizes sand to add density to the surface to be damped.. A rubber sealing compound is used largely to close all joints and in a number of instances the pressing of deeper ribs into the floor panels has also improved silencing. The safety front seat with the padded top edge and a cord rope rail has been adopted by many makes. Similarly there is recessing of control knobs to prevent injury to a passenger who might be thrust forward against the dash.

Luggage compartment space has been further increased in many models and several place the spare wheel against the rear seat panel. This eliminates the shelf over the previous horizontally positioned spare and gives considerably more vertical height.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

ALLIED BUILDING METAL INDUSTRIES, 542 West 27th St., New York City.

AMERICAN ASSOCIATION OF ENGINEERS, 8 S. Michigan Ave., Chicago, Ill.

AMERICAN CERAMIC SOCIETY, 2525 N. High St., Columbus, O.

AMERICAN CONCRETE INSTITUTE, 7400 Second Bivd., Detroit, Mich.

AMERICAN CONSTRUCTION COUNCIL, 28 W. 44th St., New York City.

AMERICAN ENGINEERING COUNCIL, 744 Jackson Place, Washington, D.C.

AMERICAN FOUNDRYMEN'S ASSN., 222 W. Adams St., Chicago, Ill.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, Bellevue Court Building, Philadelphia, Pa.

AMERICAN INSTITUTE OF CONSULTING ENGINEERS, 75 West St., New York City.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS, 33 W. 39th St., New York City.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, 29 W. 39th St., New York City.

AMERICAN IRON AND STEEL INSTITUTE, 350 Fifth Ave., New York City.

AMERICAN PETROLEUM INSTITUTE, 50 West 50th St., New York City.

AMERICAN RADIO RELAY LEAGUE, West Hartford, Conn.

AMERICAN RAILWAY ENGINEERING ASSN., 59 East Van Buren St., Chicago, Ill.

AMERICAN ROAD BUILDERS ASSN., Press Bldg., Washington, D.C.

AMERICAN SOCIETY OF CIVIL ENGINEERS, 33 W. 39th St., New York City.

American Society of Heating and Ventilating Engineers, 51 Madison Ave., New York City.

American Society of Mechanical Engineers, 29 W. 39th St., New York City.

American Society of Metals, 7016 Euclid Ave., Cleveland, O.

American Society of Municipal Engineers, 4359 Lindell Bld., St. Louis, Mo.

American Society of Naval Engineers, Navy Department, Washington, D.C.

American Society of Refrigerating Engineers, 37 W. 39th St., New York City.

American Society of Safety Engineers, 25 W. 39th St., New York City.

American Society for Steel Treating, 7015 Euclid Ave., Cleveland, O.

American Society for Testing Materials, 260 S. Broad St., Philadelphia, Pa.

American Standards Assn., 29 W. 39th St., New York City.

American Statistical Assn., 722 Woodward Bldg., Washington, D.C.

American Water Works Assn., 29 West 39th St., New York City.

Highway Research Board of the National Research Council, 2101 Constitution Ave., Washington D.C.

Illuminating Engineering Society, 29 West 39th St., New York City.

Institute of Radio Engineers, Inc., 330 West 42nd St., New York City.

National Aeronautic Assn., 1909 Massachusetts Ave., N.W., Washington, D.C.

National Board of Fire Underwriters, 85 John St., New York City.

National Fire Protection Assn., 60 Batterymarch St., Boston, Mass.

National Research Council, Washington, D.C.

National Slate Assn., 644 Drexel Bldg., Philadelphia, Pa.

New York Electrical Society, 29 W. 39th St., New York City.

Radio Club of America, 11 W. 42nd Street, New York City.

Radio Manufacturers Association, 1317 F Street, N.W., Washington, D.C.

Society of Automotive Engineers, Inc., 29 W. 39th St., New York City.

Society of Naval Architects and Marine Engineers, 29 W. 39th St., New York City.

Society for Promotion of Engineering Education, Univ. of Pittsburgh, Pittsburgh, Pa.

The Engineering Foundation, 29 West 39th St., New York City.

The Society of Motion Picture Engineers, Hotel Pennsylvania, New York City.

Western Society of Engineers, 205 Wacker Drive, Chicago, Ill.

DIVISION XX

GEOPHYSICAL SCIENCES

EARTHQUAKES AND VOLCANOES

By N. H. Heck

United States Coast and Geodetic Survey

EARTHQUAKES IN FOREIGN AREAS

The year 1937 has had few important earthquakes. During the twelve months beginning Nov. 1, 1936, there were 34 earthquakes sufficiently severe to be widely recorded by seismological stations. With few exceptions these were along the principal earthquake belts. Their character is evidenced by the fact that the earthquake of April 24 at Cajabamba, Peru, which severely damaged houses but did not destroy them, was typical of the stronger shocks. On Jan. 7, 1937 there was an earthquake in northwest China which was reported to be devastating but few facts were ever received. A submarine earthquake in the Aleutian Islands on Sept. 3, must have had great intensity as it was felt by a vessel about 400 miles from the epicenter.

UNITED STATES, ALASKA, HAWAII

In the United States there were two moderately destructive earthquakes in western Ohio on March 2 and 9. An earthquake was somewhat destructive at North Berkeley, Calif. on March 8, and another on March 25 along the San Jacinto fault in Southern California did little harm only because its center was in a sparsely settled region. There was a series of moderate shocks in the vicinity of Boulder City, Nev., which aroused interest in earthquake study in the region of great dams. The Helena, Mont. series beginning on Oct. 3, 1935, which included a number of destructive shocks during 1935, continued through October, 1937, but there were no important shocks during the year. There was a severe earthquake accompanied by surface geological changes near Fairbanks, Alaska, on July 22. On Aug. 20 Manila. P.I. suffered considerable damage to churches and other buildings.

SEISMOLOGICAL STATIONS

For the accurate location of earthquakes there are in the United States 46 seismograph stations now active, and a number of others which are inactive but which may return to activity at any time. These are operated by the national government, by educational and scientific institutions and by individuals. A new station has been established through private initiative at Portland, Me. and one is being installed through government initiative with other co-operation at Boulder City, Nev. In addition, there are two seismological stations in Alaska, one in Hawaii (in addition to a number for recording earthquakes of volcanic origin), one in Puerto Rico, and one in Panama Canal Zone. There are two in South America operated by scientific organizations of the United States, Huancayo, Peru (Carnegie Institution of Washington) and Montezuma, Chile (Smithsonian Institution). A station has been established at Kingston, Jamaica, made possible through aid from the United States, especially the Jesuit Seismological Association and the Carnegie Institution of Washington.

Most of these stations and a number of others throughout the world co-

operate with the Government. Saint Louis University and a scientific news agency forward to Washington and Saint Louis information which makes possible the immediate location of earthquakes, especially those of the Atlantic and Pacific Oceans and of the Americas. A similar service in Europe covers the rest of the earth, with of course some overlapping in both cases. During the past year an average of two and one-third earthquakes per month were located.

EARTHQUAKE LOCATIONS AND OBSERVATIONS

The purpose of these stations is to make accurate location of all earthquakes both in position and in depth, though the effectiveness of the stations varies widely with location in relation to other stations and in the capabilities of their instruments.

In addition to the stations mentioned, all of which have continuously-operating instruments, strong motion seismographs which operate only when set in motion by destructive or near-destructive ground movements, have been installed chiefly through the United States Coast and Geodetic Survey but with active cooperation from owners of sites and others. There are 50 in California, four each in Montana and Nevada, and one in the Panama Canal Zone, and provision is made for immediate installation of similar instruments elsewhere in the country, to record the aftershocks of a major earthquake.

The information obtained from these records is specially valuable in connection with the design of safer structures. Records were obtained in connection with the two March earthquakes in California but there were few others during the year. However, the instruments have been kept in readiness for more important earthquakes which may occur any day.

In order to have a complete account of every earthquake, instrumental determinations must be supplemented by reports of observers. In parts of the United States where earthquakes are infrequent, questionnaires are furnished to selected observers immediately after an earthquake. This is done by the Jesuit Seismological Association in the central part of the country and elsewhere by the Coast and Geodetic Survey except in western States. There the questionnaires are placed in the hands of observers so that they will be at hand when an earthquake occurs, and there is a state representative who makes sure that the information will be complete.

Though earthquake studies are carried on in many parts of the country there are five principal centers where records are analyzed or applications are made of the material furnished. These are Berkeley, Calif. (University of California); Pasadena, Calif. (Seismological Research Laboratory of California Institute of Technology and Carnegie Institution of Washington); Saint Louis University (Jesuit Seismological Association); Massachusetts (Oak Ridge Observatory of Harvard University), and Washington, D.C. (United States Coast and Geodetic Survey). Engineering studies are being made at California Institute of Technology, Stanford University, and Massachusetts Institute of Technology.

RELATED MEASUREMENTS

There are also related measurements such as determination of crustal movements which may be associated with earthquakes. Some work of this sort is done each year by the United States Coast and Geodetic Survey. It is also possible to determine whether the earth's crust is tilting and such observations are made at Berkeley, Calif. and at Buffalo, N.Y. These observations all relate to possible increase in stress of the crust, and a related investigation was recently undertaken in California to find whether sounds perceptible to delicate microphones can be heard along active earthquake faults. Other measurements associated with earthquakes in relation to engineering are determination of periods of buildings and of the ground. Some of this work has been done during the past year. No seismic sea waves of im-

portance were reported during the year.

VOLCANOES

Volcanic activity was moderate. The principal occurrence was the eruption beginning May 28 at Rabaul, northeast New Britain, a large island east of New Guinea which is part of the British Mandated Territories of New Guinea. Boulders and water were thrown in the air but there was no lava flow. There were crater depressions in the roads which were covered with dust and ashes in some places to a depth of four feet. A new survey of the harbor proved necessary. Reports indicate that from 250 to 300 were killed. The eruption lasted till May 30 and then rapidly died away.

On Dec. 20, 1936, 100 were killed and 300 injured in earthquakes accompanying eruptions in El Salvador which severely damaged San Vincente and eight other towns.

The volcano Asama in Japan, which has a normal cycle of three years of activity and three years of quiet, was active. Following a period of activity from February to October, 1936, it became quiet but on March 12, 1937, there was an explosive eruption. Further details have not been received.

There has been little activity in Hawaii where the usual seismograph and tilt determinations have been made by the Hawaiian Volcano Research Association and United States National Parks Service.

ECONOMIC GEOLOGY

By W. S. Burbank

United States Geological Survey

METALLIFEROUS DEPOSITS

During the year 1937 there was published a review of much interest to students of ore deposits and of conditions of mineral formation in general: "The Pneumatolytic and Hydrothermal Alternation and Synthesis of Silicates" (*Econ. Geol.*, vol 32, Aug. 1937), by G. W. Morey and E. Ingerson of the Geophysical Laboratory, Carnegie Institution of Washington. These authors note that there now exists a comprehensive knowledge of fundamental phase equilibrium relationships in certain dry-melt silicate systems that have a direct bearing on the formation of igneous rocks, but that our knowledge of systems with volatile components, which are of such great importance in the formation of mineral deposits, is far less comprehensive. They emphasize particularly the need for more systematic information on the part played by water in silicate equilibria, for they state that only by obtaining such information can the problems of mineral concentration and deposition be solved. The bibliographic review of 156 selected papers covering the period from 1845 to 1936 on the alteration and synthesis of silicates reveals clearly, however, that little of the knowledge actually at hand is at all systematic.

The bringing together of this information, widely scattered in the literature, is nevertheless an important step in initiating any program of research. The authors also review experimental methods and theoretical principles underlying hydrothermal processes. It is concluded that, although the experimental investigation of hydrothermal systems is beset with many difficulties, particularly in regard to the technical problems involved in operation of bombs at high temperatures and pressures, the knowledge of these systems can be advanced materially by care in control of certain operative and physicochemical factors involved. The review should aid and encourage a more systematic attack in the near future on these complex systems, and the Geophysical Laboratory may be expected, as usual, to take a leading part in the work.

PETROLEUM AND GAS

The most ambitious program of research in petroleum geology remains that of the American Petroleum Institute. The work sponsored by this organization, in collaboration with the Geological Survey, on source beds of petroleum continues, and a preliminary paper by P. D. Trask on "Inferences about the Origin of Oil as Indicated by the Composition of the Organic Constituents of Sediments," has been published by the Geological Survey (*Professional Paper* 186–H, 1937). Monthly bulletins of the American Association of Petroleum Geologists contain, as usual, a number of papers on strictly research problems. A paper on "Origin and Distribution of Bartlesville and Burbank Shoestring Oil Sands in Parts of Oklahoma and Kansas" (N. W. Bass, C. Leathercock, W. R. Dillard, and L. E. Kennedy, *A.A.P.G. Bull.*, vol. 21, no. 1, 1937) illustrates direct application of research involving an immense amount of lithologic and stratigraphic data accumulated by oil companies during many years' exploration in the mid-continent area. Correlation and plotting of many oil-well logs reveal that the oil-bearing "shoestring-sands" represent ancient off-shore sand bars in the Cherokee sea of early Pennsylvanian age. Accurate paleogeographic maps constructed on the basis of their studies show the position and trend of the ancient shore lines, and, hence, of the zones in which additional oil-bearing sand bars may be found by future exploration.

Another paper bearing on problems connected with the off-shore bars is that by W. G. Woolnough on "Sedimentation in Barred Basins, and Source Rocks of Oil" (*A.A.P.G. Bull.*, vol. 21, no. 9, 1937). Woolnough challenges the Doctrine of Uniformity as applied to geologic problems concerning source beds of petroleum, contending that conditions of sedimentation and of accumulation of organic matter in ancient very shallow seas that invaded the continental areas were unlike those of the modern seas, which, except for insignificant fringes bordering the oceanic basins, are withdrawn from the broad epicontinental platforms. If his contention is correct, and there are many arguments in its favor, research on present-day processes of marine sedimentation falls short of elucidating many processes that took place in the ancient epicontinental seas.

The main thesis of his paper is that, in ancient shallow seas which invaded the broad continental plateaus, connections to the open sea waters were intermittently barred by reefs and by other barriers, formed either by direct sedimentation or by broad basin and dome-like warpings of the continental platform. Intermittent passage of marine organisms into the confined areas and repeated destruction of life by changes in salinity of the entrapped waters are cited as factors in the accumulation of organic matter that forms the potential source of petroleum. According to the simplest interpretation of such conditions, the petroleum generated in the course of ages migrates laterally into the more porous rocks, such as adjacent sand barriers; but in many oil fields more complex conditions doubtless hold, and some vertical migration of oil has probably occurred as well. Although extensive bar and reef barriers have been established for a few of the ancient seas, the contention that most of the oil is derived from accumulations behind the barriers is not proved for many specific examples, for this would require much more extensive knowledge of the configuration and conditions of sedimentation in ancient seas and more information on directions and distances of migration of the oil than are at present available.

In connection with the indicated trends of research in petroleum geology as illustrated by these papers, one, a statistical study of "Discovery Rates in Oil Finding," by W. E. Pratt (*A.A.P.G. Bull.*, no. 6, 1937), is of special interest. The major oil field discoveries in the United States, during successive 5-year periods, are classified as to method of discovery into those resulting from (1) purely random drilling, (2) obvious evidences, (3) geological inves-

tigations, (4) geophysical investigations, and (5) deeper drilling in shallow producing areas. Strictly geologic studies are found to be responsible for nearly 50 per cent of major oil fields during the past 35 years, and purely random drilling about 16 per cent. Random drilling accounted for about 30 per cent in the first decade, with only little contribution from geology, which reached its maximum effectiveness from 1926 to 1930.

Geophysics became of importance only in the last decade, accounting for 55 per cent of the total, though having no discovery credit previously. In the last five years geophysics has maintained its accomplishments, but geological discoveries are definitely fewer in number. Much recent effort has been directed towards perfection of geophysical methods for determining structure at greater depth, but, as there is an obvious limit to merely extending depth of exploration, the conclusion is reached that to maintain our established record of discovery and to meet even current consumption, further improvement in the general technique is necessary. The recommendations of research outlined a year ago by A. I. Levorsen are cited as important. Geologic studies at once broader and more intensive than the older "structure hunting" methods were mentioned. These include studies, such as those reviewed above, where oil accumulations resulted from confined basins and shoreline conditions rather than from simple deformation of strata. It is implied that intensive studies of stratigraphy, sedimentation, paleontology, paleogeography, and related fields will become of much importance, with the expectation of continued aid from geophysics.

SALT BASINS OF THE PERMIAN

A paper by W. B. Lang on "The Permian Formation of the Pecos Valley of New Mexico and Texas (*A.A.P.G. Bull.*, No. 7, 1937) is a condensed review of the geologic results of more than a decade of investigations of potash resources undertaken by the Geological Survey, Department of the Interior. The potash-bearing deposits of the southern Permian basins are products of evaporating sea waters in shallow basin-like depressions of the Permian seas. Bedded and massive reef limestones are thought to have had an important influence in restricting circulation and affecting the more complete deposition of salts in the shallow back-reef areas of the seas. Conditions in the Permian seas are interpreted as different from those found in connection with present-day fringing reefs, for the Permian lagoons or back reef areas were occupied by very shallow and concentrated sea waters evolved under the influence of an arid climate.

Depending upon the effectiveness of restrictions to circulation, rate of evaporation, and nearness to land, the deposits of the back-reef areas are divided into lithologic and chemical zones representing relative salinity. The "supersaline zone," in which halite and potash salts were deposited, corresponds to shallow pockets of the back-reef area marginal to the low land surrounding the basins. A zone in which anhydrite is the principal chemical precipitate lies between this zone and the fringing reef. With regard to the Permian deposits, Lang finds that the environment most favorable to accumulations of organic matter lay close to the fringing reefs where organisms seem to have accidentally migrated into zones intolerable to life. The typical sediments of the life or "vitasaline" zone are organic limestones, sandstones, and dolomitic limestones. This is the same potential zone of oil accumulation referred to in the papers reviewed above.

COAL

Events of importance during the year were the adoption by both the American Society for Testing Materials (June) and the American Standards Association (Sept.) of a permanent standard classification of coals by rank and grade. The classification adopted represents the results of a number of years' work by the

Sectional Committee on classification of coal, comprising eight producers, nine consumers, two distributors, and nine representatives of general and scientific interests, including a representative of the National Research Council. The classification by rank is based on degree of metamorphism or progressive alteration of coals in the natural series from lignite to anthracite. The series of coals is the result of natural geologic processes little understood as to their exact nature; but, for the practical purposes of this classification, the degree of metamorphism is measured by the fixed carbon and B.t.u. content of the coals, the coals of higher rank being classed according to dry fixed carbon, and those of lower rank by moist B.t.u. content. Weathering and agglomerating tests are used to distinguish between ranks in several border-line cases. The classification by grade is an index to the quality of coal as determined by calorific value, ash and sulphur content, and ash-softening temperature.

UNDERGROUND WATERS

During 1937 the results of measurements of water levels made during 1936 in several thousand observation wells in 28 States and the Territory of Hawaii were published by the Geological Survey in *Water-Supply 817*, which is the second of a recently instituted series of annual reports. These records show that in many localities, in spite of the severe drought of 1936, the ground-water table did not drop as low as in 1934. In Pennsylvania the water table rose during the disastrous floods of March, 1936, to the highest stage since measurements were begun in 1931; but following the dry summer it generally dropped nearly to the lowest level of record.

There was increased activity in ground-water studies, partly as a result of the interest aroused by the recent droughts, and by the emphasis placed on ground water by the Water Resources Committee of the National Resources Committee. In the fiscal year ended June 30, 1937, the Geological Survey, United States Department of the Interior, carried on 62 investigations in 32 States and in Hawaii and Guam. A large number of these investigations were made in cooperation with States, geological surveys or State water-resource bureaus, and in addition, several States made independent investigations.

At the annual meeting of the American Geophysical Union a group of papers discussed the availability of geophysical methods, especially of the electrical resistivitv method, of determining geological and hydrological conditions in ground-water investigations in Illinois, Texas, and Hawaii. The electrical resistivity method gives promise of usefulness in determining the boundaries between fresh and salt water and outlining bodies of water-bearing sand and gravel. The paper by C. E. Heiland presented a valuable summary of the different methods and problems of prospecting for ground water with geophysical methods.

In 1937, for the first time, the Section of Hydrology of the American Geophysical Union, compiled and published a bibliography of hydrology in the United States (for the years 1935 and 1936) as its contribution to the bibliography established by the International Association of Scientific Hydrology. A list of nearly 150 papers on ground water and soil moisture, out of a total of about 600 in the United States bibliography, testifies to the active interest in this subject.

MINERALOGY AND PETROGRAPHY

By Clifford Frondel

Department of Geology, Massachusetts Institute of Technology

MINERALOGY OF SILICOSIS

The attention which has centered on the problem of silicosis has led to the entrance of mineralogists into the field in a co-operative effort to contribute to a solution. Since the materials which cause silicosis are mineralogical in nature, and since experimental search for a preventative involves the study and use of mineralogical and petrographic materials and techniques, it is proper to remove this part of the burden from the physiologist. Silicosis is caused by the liberation in the lung of colloidal silica formed by the action of the mildly alkaline lung fluids on inhaled siliceous materials. The colloidal silica collects on the cell walls and smothers them. The dead cells are then replaced by inert connective tissue which constitutes the silicotic nodule. Although the lung is equipped with amoeboid scavenger cells (phagocytes) which engulf inhaled foreign bodies and eliminate them from the lung, the phagocytosis of colloidal silica seems not to take place unaided.

Further, it is found that certain mixtures of minerals are eliminated from the lung more readily than pure minerals. Within the present year, R. C. Emmons and R. Wilcox, of the University of Wisconsin, have described an investigation directed at the protective action of certain minerals when admixed with otherwise noxious dusts. It is advocated that protective dusts, if not already present, should be added to an environment where the silicosis hazard prevails. The added dusts, by virtue of specific colloidal properties, flocculate or adsorb the colloidal silica and so facilitate phagocytosis. *Hematite, calcite, shale* and *carbon black* dusts are advocated as protectors. The grain size of the added dust is of importance, since only sizes below 10 microns are effective.

MINERAL MICROCHEMISTRY

An increasing application of microchemistry to determinative mineralogy has been found in recent years. Following an extensive summary of microchemical procedures by L. W. Staples (see The American Year Book, 1936, 669), L. J. Fraser and R. M. Dreyer of the California Institue of Technology have discussed the general problem of mutual interference of several elements in microchemical reactions. The tests discussed imclude most of the reactions commonly used in the identification of the ore minerals. Selective leaching of the decomposed mineral residue is of material value in eliminating interference. The microchemistry of the platinum-palladium group of metals and of silicon has also been discussed in recent publications.

CONSTITUTION OF THE SILICATES

The theory that the silicate minerals represent salts of various silicic acids is almost as old as the science of mineralogy itself. Within the past two decades, however, a re-examination of the constitution of the silicates has become possible through the introduction of x-ray methods of structure analysis. As a result of this new method of attack, the old silicic acid theory has become untenable and an entirely new conception of the make-up of the silicates has been evolved. The silicates must now be considered as frameworks of silicon-oxygen tetrahedra indefinitely extended in the crystal. According to the different ways in which these tetrahedra link up we have different compositions, physical properties and chemical behavior in the several types of silicates. Early efforts to classify the silicates on the basis of the x-ray findings were made by Bragg (1930) and Machatschki (1928). H. Berman, of Harvard University, has now made a systematic investigation of all the

well-defined silicates to ascertain the extent to which the newer work is valid. A thoroughgoing classification, formulated to meet the needs of descriptive mineralogy, is described. The basis of classification is made the silicon to oxygen ratios, in the various types of linkage of the unit tetrahedra. This is essentially a chemical classification. since the composition of each type is characteristic.

MICA IN SEDIMENTARY ROCKS

A mineral belonging to the mica group has long been recognized as an important constituent of argillaceous rocks. Hitherto, efforts to study this mineral in detail have been unsuccessful because of its extremely small particle size. By the use of an ultracentrifuge, investigators of the Illinois State Geological Survey have succeeded in separating a mica-like substance from a varietv of soils, clays and shales, mostly from Illinois. Optical, x-ray and chemical study shows that the substance is similar to muscovite, but differs slightly in chemical respects. The name *illite* is proposed to designate all of the clay mineral constituents of argillaceous rocks belonging to the mica group.

DIAMONDS IN THE UNITED STATES

E. W. Blank has summarized the information available on the occurrence of the diamond in the United States. Three fairly well defined regions of occurrence can be recognized: in stream gravels along the Pacific Coast, mainly in California west of the Sierra Nevada; in glacial drift in the northern States from Wisconsin to Ohio; and east of the Appalachian Mountains from Virginia to Arkansas. The Arkansas occurrences in peridotite are not now worked.

NEW MINERALS

Potassium dichromate, hitherto known only as an artificial salt, has been found in the nitrate deposits of the Tocopilla and Iquique pampas, Chile. The mineral, for which the name *lopezite* is proposed, occurs associated with the natural potassium chromate, *tarapacaite*. *Dakeite* is a new secondary uranium mineral found as small rounded aggregates in massive gypsum near Wamsutter, Wyo. The nickel selenide, *penroseite*, has been shown to be identical with *blockite*, and the latter name has been discarded. *Coulsonite* is a vanadium-bearing variety of *magnetite* from the iron ore deposits of Bihar, India. Study of the water-insoluble residues of rock salt from the Choctaw salt dome, Louisiana, has revealed an unusual assemblage of minerals, including *danburite, boracite* and a new species, *hilgardite*. The latter mineral is a calcium chlorborate, and is the second known mineral to crystallize in the monoclinic-domatic class. *Skolite* is an aluminous member of the *glauconite* series, found in sandstone at Skole, Poland.

The tin deposit at Arandis, German Southwest Africa, has afforded a new tin-bearing variety of *titanite*. *Chlopinite*, a complex rare-element titanate, occurs associated with *monazite* at Khilok, Transbaikalia. A new member of the *olivine* group, *talasskite*, occurs in a pegmatite vein in the Talassa valley, Kirghizian, U.S.S.R. *Labite* is a hydrous magnesium silicate found in *serpentine* in Laba province, northern Caucasus. The name *ferri-sicklerite* is applied to a phosphate of manganese and iron found as an alteration product of *triphyllite* in a pegmatite at Varuträsk, Sweden. *Varulite*, from the same locality, is a similar, soda-rich phosphate. The name *kasolite* is given to a new barium feldspar found associated with *celsian* and *hyalophane* at the Kaso mine, Tochigi prefecture, Japan. *Parkerite* is a new nickel sulphide from the nickeliferous ore deposits of East Griqualand, Africa, where it occurs associated with *niggliite*, a telluride of platinum. A hydrocarbon, *carburan*, has been noted in pegmatites in the pre-Cambrian rocks of northern Karelia, U.S.S.R. The substance is apparently analogous to the *thucholite* from some Canadian pegmatites. *Roweite* is a borate of manganese and calcium from the zinc deposit at Franklin, N.J. A new sulphate-phosphate member of the *beudantite* group is named *woodhouseite*. It is

found in quartz veins that penetrate the commercial andalusite deposits in Mono County, California. *Scheteligite* is a rare earth mineral from a pegmatite near Tarvelona, Sweden, where it occurs associated with *euxenite* and *monazite*.

NEW MINERALOGICAL PUBLICATIONS

Atomic Structure of Minerals, by W. L. Bragg (Ithaca, 1937, 292 pp., 144 figs.). This book, by a distinguished English x-ray crystallographer, presents a systematic discussion of all the mineral structures described up to the end of 1936. A brief treatment of symmetry and space group nomenclature, ionic radii and co-ordination is included. *Introduction to the Study of Minerals,* by A. F. Rogers (3rd ed., New York, 1937, 626 pp., 730 figs.). A new chapter on microchemical analysis is included. *The Story of the Gems—A Popular Handbook,* by H. P. Whitlock (New York, 1936, 206 pp.), with numerous illustrations. The author, who has long been Curator of Minerals and Gems at the American Museum of Natural History, has incorporated in this volume a large amount of material not ordinarily found in similar books.

MAGMATIC DIFFERENTIATION

In a paper delivered at the Harvard Tercentenary, Clarence Fenner of the Geophysical Laboratory, Carnegie Institution, has critically reviewed some of the major difficulties that confront an attempt to explain all of the phenomena of differentiation of igneous magmas by a single process. Special attention is given to the development of both acid micropegmatite and basic macropegmatite as final consolidation phenomena in diabase, and to observe occurrences in which basaltic material has been assimilated by rhyolitic magmas. Such occurrences cannot be explained by Bowen's theory of differentiation by crystal fractionation.

PETROFABRIC ANALYSIS

The detailed study of the orientation of crystals in rock sections has led in many instances to a knowledge of the tectonic and crystallization history of the rock. According to the present technique of petrofabric analysis, however, a large personal factor enters into the interpretation of the diagrams expressing the data. Statistical methods have now been devised by Horace Winchell, University of Wisconsin, which measure the probability that an observed distribution of crystals differs significantly from a theoretically random distribution. The methods also describe, to a certain extent, the crystal distribution with respect to direction.

ANTARCTIC PETROGRAPHY

A further study of the petrography of rocks from the Antartic Archipelago and the South Orkney Islands has been contributed by Duncan Stewart, Jr. Earlier work has been noted in The American Year Book, 1935. It is now suggested that the series of granite-diorite-gabbro intrusives of the Archipelago were the source, at least in part, of the Jurassic sedimentary strata of the region. This would necessitate a pre-Jurassic age for the intrusives, in spite of a considerable resemblance to the early Tertiary intrusive rocks of the southern Andes of South America.

ACCESSORY MINERALS IN IGNEOUS ROCKS

The constantly increasing interest of geologists in the study of accessory minerals in rocks led to the formation, in 1931, of a Committee on Accessory Minerals of Crystalline Rocks in the Division of Geology and Geography of the National Research Council. Much of the work in this general field has been done by British scientists. In recent years, however, the work of others along this line has been stimulated, in part because of the application of results to oil field problems. In a recent paper, J. C. Reed of the U. S. Geological Survey has traced the development of the study of accessory minerals, and has discussed the applications of such studies to problems of igneous geology. Although the present knowledge in the field is only rudimentary,

the work of many investigators, combining both field and laboratory observations, points to a wide application of the method to the correlation or differentiation of rock masses and to geochemical problems. The study of the accessory metallic oxide and sulphide minerals of igneous rocks has already thrown light on the origin of some types of ore deposits (see THE AMERICAN YEAR BOOK, 1936, 671).

PEGMATITES AND ORE DEPOSITS

The recognition of hydrothermal mineralization in complex pegmatites has led to speculations as to whether or not such a phase possibly connects pegmatites with ore-bearing hydrothermal veins. K. K. Landes of the University of Kansas has recently reviewed the rather extensive literature on the subject. It is concluded that granitic magmas produce pegmatites and these in turn produce hydrothermal solutions which may precipitate ores of tin, tungsten and molybdenum both in the country rock and in the pegmatite. Intermediate magmas during their crystallization sequence pass through only a minor pegmatite phase before entering the hydrothermal phase. During the latter phase, gold, sulphides and similar ore minerals are deposited in whatever pegmatites are present, but mainly in hydrothermal veins in the country rocks.

NEW PUBLICATIONS IN PETROGRAPHY

A Descriptive Petrography of the Igneous Rocks, Vol. III, *The Intermediate Rocks,* by Albert Johannsen (Chicago, 1937, 360 pp.). The volume discusses the igneous rocks in the series from syenite to gabbro, and maintains the same high quality of the preceding volumes of this scholarly work. The historical sketches of the origin and development of rock names are of particular value. Many photomicrographs and photographs of rocks and numerous chemical analyses and modes are included. *Interpretative Petrology of the Igneous Rocks,* by H. L. Alling (New York, 1936, 353 pp., 48 figs.) is a book that has as its aim the interpretation of igneous rocks from the principles of physical chemistry, rather than the description of igneous rock types.

TERRESTRIAL MAGNETISM AND ELECTRICITY

BY JOHN A. FLEMING

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GENERAL

The progress in terrestrial magnetism and electricity achieved during the year 1937 was not confined to the further accumulation of observational data and to experimental investigation, but much effort was expended on the co-ordination and integration of isolated researches permitting broader interpretation of the inferences furnished by each. It is, therefore, evident that general progress in geophysical research depends more and more upon the co-operation of workers in its own and neighboring fields. Thus, for example, the problem of the special type of magnetic disturbance and fade-outs in high-frequency radio-wave reflections associated with bright eruptions in the solar chromosphere requires the united services of terrestrial magnetism, radio, and astronomy for its elucidation.

CHROMOSPHERIC, MAGNETIC, AND IONOSPHERIC DISTURBANCES

The conclusive proof of association of a special type of magnetic disturbance and sharp fade-outs of high-frequency radio-wave reflections with bright eruptions in the solar chromosphere resulting from the work of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington in co-operation with the Mount Wilson Observatory and other organizations constitutes

one of the major advances in recent years. These effects are propagated from the Sun to the Earth with the velocity of light. The active agent is believed to be ultra-violet light originating in the solar eruption, which produces sudden and intense electrification of the Earth's upper atmosphere. These new effects serve to discriminate between various theories of terrestrial-magnetic changes and supply evidence on the electrical processes taking place in the ionosphere. The discovery that the phenomena of radio fade-outs are related to a magnetic effect of the diurnal-variation type is a definite advance towards the ultimate objective of the ionospheric investigations. The high ionization produced below the lower *E*-region of the ionosphere by bright chromospheric eruptions apparently causes radio-echo disappearance through absorption in this region of high collisional frequency. The production of this high ionization is the necessary condition for the magnetic disturbance of the diurnal-variation type and its recognition is a definite step towards the understanding of magnetic perturbations.

SECULAR VARIATION

Secular change of the Earth's magnetic field was further studied by comparing the data used by Adolf Schmidt and by Furner and Dyson for their analyses of the permanent field for epochs 1885 and 1922. A region of decreasing northern magnetic potential was found off the Guinea Coast, where the change in the 37-year interval amounts to 6,000 gammas or one-tenth of the value of the permanent field at the poles. It seems quite likely that secular change involves a change in the regions where the permanent field of the Earth originates.

The final discussion of more than 2,200 declination-values obtained by the *Galilee* and the *Carnegie* during 1905–1929 in the Pacific was completed at the Department of Terrestrial Magnetism. The adjustments, of ten unknowns each, were made in 33 slightly overlapping areas called squares with sides, as a rule, somewhat over 20° in latitude and in longitude. Although the accuracy to be expected in the annual change has limitations due to the method used, it is nevertheless quite remarkable that in seven of the 33 squares the probable error of the annual change at the reference-point is $\pm 0.'1$, and in nine it is $\pm 0.'2$. In certain regions of the Southern Pacific below latitude 40°, where the observations are few and the range in time-distribution is small, the results are not so satisfactory.

MEASUREMENT OF ROCK-MAGNETIZATION

The possibility that the magnetization of rocks may yield interesting information regarding the history of the Earth's magnetic field in past geologic ages and may furnish a basis for rapidly dating various rocks has led to experiments on electromagnetic measurement of rock-samples. Particular interest is attached to the magnetic properties of ocean-bottom samples obtained with the apparatus designed by Dr. C. S. Piggot of the Geophysical Laboratory of the Carnegie Institution of Washington; with this apparatus it is possible to obtain vertical core-samples as long as 12 to 14 feet. In the process of cooling and sedimentation, substances are known to assume magnetization in the direction of the prevailing magnetic field at the time and place of their formation. If this magnetization is retained through subsequent time, the rocks furnish a record of the Earth's magnetic field extending through past ages, and similarities in the magnetic condition of various rocks may be indicative of similar times of formation. Such examination may also be the means of delineating magnetic anomalies in regions of great depths as well as shallow depths.

OBSERVATORIES

The observatories in the United States of the Coast and Geodetic Survey (5), in Australia, Peru, and Samoa (in part) of the Carnegie Institution of Washington (3), and the

observatories in Canada (2), Mexico (1), Argentina (4), and Brazil (1), as listed in THE AMERICAN YEAR BOOK for 1936 (pp. 675–676), continued observational programs as in previous years.

A major development which it is believed will be of considerable importance to future investigations in terrestrial magnetism through laboratory-approach was the construction of two "atomic-physics observatories." In Washington at the Department of Terrestrial Magnetism, the Carnegie Institution built such an observatory during 1937 consisting of a pear-shaped steel vessel 55 feet high and 37½ feet in diameter at the upper end, in which it is planned to install a large electrostatic generator and vacuum-tube to operate under compressed air at 50 pounds per square inch. This equipment will permit laboratory operations under precise control at potentials exceeding 5,000,000 volts. It is designed primarily for further nuclear-physics investigations having to do with the constitution of matter which is intimately related with magnetic phenomena. A similar equipment including a tank 30 feet in diameter to operate, however, at a pressure of 120 pounds per square inch was erected by the Research Laboratory of the Westinghouse Electric and Manufacturing Company at Pittsburgh.

MAGNETIC SURVEYS

Magnetic-survey operations were continued in Canada, United States, Mexico, and Argentina by the respective governments. An intensive campaign for the reoccupation of old stations to determine magnetic secular-variation is already under way in the Argentine and will continue throughout 1938.

The Carnegie Institution of Washington through its Department of Terrestrial Magnetism obtained secular-variation data at repeat-stations during 1937, particularly in China, Arabia, Queensland, New South Wales, Victoria, Tasmania, the various island groups of the Central Pacific Ocean, and New Zealand.

An expedition under the command of C. J. MacGregor sailed from Port Newark, N.J., July 1, 1937, on the *General A. W. Greely,* with the intention of establishing its base at Fort Conger, Lady Franklin Bay, Grinnell Land, a station occupied by General Greely during the First International Polar Year 1882–1883. When about 60 miles from the goal the vessel was forced back by severe storms to the vicinity of Etah, Greenland. Owing to the lateness of the season, Capt. MacGregor decided to winter at Reindeer Point, Greenland, where he established a complete magnetic, auroral, and meterological station, and from which he makes daily reports of progress by radio.

AMERICAN MAGNETIC CHARACTER-FIGURE

The close relationship of radio transmission-conditions with terrestrial-magnetic storms indicates a need for an accurate and immediately available measure of magnetic disturbance for scientific studies and for prediction of those conditions. The international magnetic character-figure inaugurated in 1906 and published quarterly fails to fulfill this need because the published data are not supplied soon enough, the time-interval—an individual day—is not short enough for adequate comparison, and the scale 0, 1, and 2 does not allow sufficient graduation for classification. Accordingly, the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, with the co-operation of the United States Coast and Geodetic Survey, the communication-services of the United States Army and the United States Navy, and several radio amateurs, began March 13, 1937 to supply weekly bulletins on the state of the Earth's magnetic field for each Greenwich half-day. These bulletins are based upon the estimates of magnetic character communicated by radio or telegraph from the Huancayo and Watheroo magnetic observatories operated by the Carnegie Institution of Washington and the five observatories of the United States Coast and Geodetic Survey. Through co-operation with

Science Service, these character-figures are broadcast weekly from station WIXAL of the World-Wide Broadcasting Foundation of Boston. That Service also distributes weekly these values of the American magnetic character-figures.

ARCHIVES OF MAGNETIC RECORDS

The Department of Terrestrial Magnetism of the Carnegie Institution of Washington has been designated to act as a central bureau for disseminating Polar-Year magnetic records for this side of the Atlantic. Over 700 miniature film-records from various observatories had been received from the Central Bureau of the International Polar Year Commission at Copenhagen, Denmark, by the end of 1937. Each film gives one month of daily magnetic records from one observatory. The availability of these records offers scientific organizations in America a unique advantage in the study of terrestrial-magnetic phenomena.

IONOSPHERE

Mathematical considerations have long indicated an ionized upper atmospheric region as the seat of magnetic disturbance and variation. With this in view, the Department of Terrestrial Magnetism of the Carnegie Institution of Washington began in 1925 experiments for obtaining direct evidence of the nature of these ionized regions. Subsequent experiments have showed the distribution of ionization to be complex and advances in experimental technique have permitted the formulation of more exact ideas as to the location, nature, and characteristics of the ion-banks. The association of a particular region of the ionosphere with a magnetic effect of the diurnal-variation type represents a definite advance toward the original objective of examination of theoretical concepts of these phenomena by experimental methods.

With the completion of continuously recording equipment for determination of ionization throughout the ionosphere, further information on the nature of the electrified particles in the various regions was obtained. The records from this new equipment have presented new and heretofore unsuspected problems in the study of the ionosphere, at the same time providing many experimental data for their solution.

Because of the world-wide aspects of ionospheric investigations, close co-operation is necessary among observers throughout the world. Those organizations in the United States and Canada engaged in ionospheric research include National Bureau of Standards; Carnegie Institution of Washington through its stations at Kensington (Maryland), Huancayo (Peru), Watheroo (Western Australia), and, in co-operation with the University of Alaska, at College (Alaska), and at Wuchang (China) in co-operation with the Central China College; Stanford University; Harvard University; Naval Research Laboratory; University of Puerto Rico; Canadian Research Board.

The third annual Conference on Ionospheric Research was held May 1, 1937 in Washington. The Conference developed, as an outstanding feature, the close co-operation, both intellectual and material, between the various branches of science which have a bearing on the upper atmosphere, namely, studies of radio, terrestrial magnetism, the Sun, and atmospheric ozone, as well as the fundamental processes of physics and chemistry; each has important contributions to make and all can be mutually helpful in deriving valuable information perhaps otherwise unattainable.

EARTH-CURRENTS

The study of the variation in the daily mean values of earth-current potentials to determine the existence and magnitude of components in earth-current flow with periods longer than one day indicates part of the current flowing during disturbances to be unidirectional for the day. The magnitude of this "disturbance-component" is only a few per cent of the range of the diurnal variation, and its direction at a given station is consistent with that noted in the diurnal-variation records.

Investigation of the Tucson Ob-

servatory records reveals a definite lunar diurnal variation of markedly double period for both northward and eastward components. The investigation thus far made indicates that the general features of lunar diurnal variation in earth-currents are determinable from a comparatively brief series of records, especially when long lines are used.

An investigation of geoelectrical phenomena in mountainous regions was made on Pass Mountain near Luray, Virginia. The results do not support the conclusion reached by a number of observers that the electrical potential gradient in mountainous regions is always directed from the base to the top of a mountain. The direction of flow indicated in these experiments was up the slope on the west side of Pass Mountain and downward on the east side.

COSMIC RADIATION

Three precision cosmic-ray meters were maintained in operation through the efforts of the Carnegie Institution of Washington for further accumulation of data required for elucidation of problems in connection with cosmic radiation. One meter was operated during the year at the Cheltenham Magnetic Observatory, another at the Huancayo Magnetic Observatory in Peru, and a third at the Christchurch Magnetic Observatory in New Zealand. In February, 1937, a fourth meter was installed and has been in operation since then on the grounds of the National Astronomical Observatory of Mexico at Teoloyucan, D.F.

Another meter was mounted for 13 voyages on the steamship *Aorangi* plying between Vancouver and Sydney, Australia, and since January, 1937 has been on the steamship *Talune* plying between Sydney and Hobart, Tasmania. The chief objectives of this installation were to obtain comparison of cosmic radiation in the Northern and Southern hemispheres and to obtain data bearing upon possible variations of the intensity of radiation with the different seasons. Still another meter was in use at the Massachusetts Institute of Technology during the year for experimental work in connection with the program of high-altitude studies of cosmic radiation. A seventh meter is being held at the University of Chicago for experimental and development work in the expectation that it will be ultimately installed at Godhavn, Greenland.

A series of simultaneous recordings of cosmic-ray intensity by different types of instruments was obtained in Washington during 1937 and also in Huancayo, Peru. It is hoped that the resulting data will make it possible to obtain a statistically adequate determination of the relative performances of various instruments of the same type and of different types.

A. H. Compton of the University of Chicago investigated the difference in cosmic-ray intensity between Northern and Southern hemispheres.

R. D. Bennett of the Massachusetts Institute of Technology and D. Heyworth of Wellesley College are engaged on an analysis of Cheltenham data seeking a correlation between frequency of bursts and solar time

R. A. Millikan of the California Institute of Technology and his associates report important advances in studies of latitude-effects up to the top of the atmosphere, on the measurement of the energies of cloud-chamber tracks, on sea-level cosmic-ray showers as a function of latitude, on the frequency of showers below sea-level, and on the development of a cosmic-ray telescope

T. H. Johnson of the Bartol Research Foundation of the Franklin Institute has studied particularly the nature and energy-distribution of the primary cosmic radiation through unidirectional measurements at sea-level and radio-balloon measurements in the stratosphere.

On the basis of cosmic-ray records made available by the Carnegie Institution of Washington's Committee on Co-ordination of Cosmic-Ray Investigations from Huancayo (Peru), Cheltenham (United States), Teoloyucan (Mexico), Christchurch (New Zealand), and Capetown (Union of South Africa), S. E. Forbush at the

Department of Terrestrial Magnetism made an investigation of possible relationships with magnetic and other phenomena. Comparison of the daily means of cosmic-ray intensity for Huancayo, Cheltenham, and Capetown showed similarity among the three and suggested the possibility of world-wide changes in cosmic-ray intensity. A study of such changes occurring at Huancayo and Cheltenham simultaneously with changes in magnetic horizontal intensity during the storm beginning April 24, 1937, showed definitely for the first time that a magnetic storm can produce world-wide changes in cosmic-ray intensity. Mr. Forbush also made statistical analyses of the cosmic-ray data obtained at Cheltenham from April, 1935 to October, 1936. The results demonstrated the existence of a statistically real solar diurnal variation in recorded cosmic-ray intensity. The statistics obtained permit tests of possible causes of solar diurnal variation and tests for the existence of a sidereal variation as reported by some investigators. The analyses indicated two other results of vital importance, namely, (1) the barometric co-efficients derived from different samples of data are statistically in agreement and (2) the observed solar diurnal variation is independent of the diurnal variation in atmospheric temperature as measured near the ground. A similar analysis of the data obtained from Huancayo indicates a solar diurnal variation roughly in agreement with that obtained at Cheltenham. Preliminary investigations of the sidereal diurnal variation have also been made, but the results have thus far been of a negative nature.

S. A. Korff gave special attention to the development of a cosmic-ray apparatus operating on the radiosonde principle for use in sounding balloons. During an expedition in the summer of 1937 to Peru some 30 high-altitude balloon-flights using this equipment were made. The apparatuses worked well and on one flight reached an altitude of 117,000 feet, breaking by a wide margin the world's record for balloon-carried instruments. Four of the flights exceeded 90,000 feet, and the remaining 25 reached altitudes between 45,000 and 90,000 feet. This program was a co-operative one of the Department of Terrestrial Magnetism, acting for the Carnegie Institution's Cosmic-Ray Committee, with the National Bureau of Standards and the United States Weather Bureau. One of the outstanding results obtained is that above about 55,000 feet the cosmic-ray intensity begins to decrease, this indicating that a large part of the ionization at high altitudes is produced by secondaries formed in the Earth's atmosphere.

AMERICAN ORGANIZATIONS DOING MAGNETIC WORK

The American organizations doing magnetic and electric work continue to be as listed in THE AMERICAN YEAR BOOK for 1936 (pp. 674–675) under (1) government agencies, (2) universities, (3) private organizations, and (4) Society of Jesus, except that to the universities are to be added the following: University of Rochester—Ozone; solar ultra-violet light; Massachusetts Institute of Technology—Cosmic-terrestrial research; Louisiana State University—Temporary magnetic observatory at Baton Rouge with Coast and Geodetic Survey instruments for an extended program of diurnal-variation observations.

PUBLICATIONS

The international quarterly *Journal of Terrestrial Magnetism and Atmospheric Electricity* published by the Johns Hopkins Press completed its forty-second annual volume in 1937. It includes original contributions on all aspects of terrestrial magnetism and electricity, with notes on current activities, reviews of important publications, and extensive bibliographies.

The American Geophysical Union published, in two volumes, the *Transactions* of its eighteenth annual meeting held in Washington during April, 1937 and in Denver during June, 1937. These *Transactions* give scientific papers and reports of geophysical

work in progress in North America.

There was published by the University of Alaska as Volume III of its Miscellaneous Publications, *Auroral Research at the University of Alaska 1930–1934.* This volume summarizes auroral measurements and conclusions resulting from the five-year program subsidized by the Rockefeller Foundation at the University during the years 1930–1934.

The United States Coast and Geodetic Survey continued the preparation of the results at its magnetic observatories for publication. The results at the Tucson Observatory in 1927 and 1928 and at the Honolulu Observatory in 1929 and 1930 were issued, as also *United States Magnetic Tables and Magnetic Charts for 1935.* A special bulletin, *Magnetic Declination in Arkansas for 1935,* was prepared.

The Annual Report of the Director of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, issued Dec. 10, 1937, outlines the work accomplished during July 1, 1936 to June 30, 1937, in its various fields of geophysical investigation. It is accompanied by a complete bibliography of papers published by members of its staff.

Science Service continued to compile and broadcast daily throughout the year from the Arlington Station of the United States Naval Observatory the American URSIgrams of geophysical data. Weekly research aid announcements of cosmic data were also distributed by that Service; in addition to the data supplied in previous years, these announcements contain the American magnetic character-figure for each Greenwich half-day.

METEOROLOGY AND CLIMATOLOGY

By Robert G. Stone

Blue Hill Observatory of Harvard University

GENERAL

The unusual progress in meteorology in 1937 fulfilled the optimism of the last few years. Aside from marked advances in various practical matters, mostly in continuation of tendencies definitely begun several years or more before, the highlight of the year's developments was the successful application of an apparently fundamental and relatively new principle of atmospheric motion to a variety of theoretical and practical problems, with results probably heralding a new era of radically new meteorological thought in the broad sense.

ISENTROPIC PRINCIPLE OF ATMOSPHERIC MOTION

This new principle is that in the free air above the layers directly affected by friction with and convection from the ground a large but varying part of the motion of the air takes place isentropically, rather than isobarically as hitherto assumed. This idea had been suggested by the British meteorologist, Sir Napier Shaw, some years ago, but without very convincing observational evidence since the necessary upper-air data were then inadequate.

The expression "isentropic" means literally "of equal energy" or "equal entropy." Since the entropy is proportional to the potential temperature the surfaces of equal potential temperature in the free air may be used to show the planes along which the air is most likely to flow or is flowing. The potential temperature is simply the temperature in degrees absolute which a parcel of air would have if brought down, without addition or escape of heat (energy) from or to its surroundings, to the standard barometric pressure of 1,000 millbars, which is nearly the average sea-level pressure.

There are a number of good theoretical reasons for assuming isentropic motion but hitherto not only the necessary upper air observations

to prove it have been lacking but also nearly all meteorologists have been so imbued with traditional (mostly empirical) theories and practices that isentropic motion was never seriously considered. No attempt to demonstrate it in observations was made until Prof. C. G. Rossby, of Massachusetts Institute of Technology and Woods Hole Oceanographic Institution took it up in 1935 and 1936 after oceanographical studies of the Gulf Stream and Carribbean by Dr. A. E. Parr of Yale University and Professor Rossby had suggested its existence in the sea. The reader will recall that both air and water are fluids of analogous hydrodynamical behavior. The particular clue which they found was in the distribution of temperatures and salinities which seemed to require for their explanation a special kind of large-scale horizontal turbulence in stratified currents, big eddies that reach out laterally along the surfaces of equal entropy transferring the properties of the current—momentum, temperature, salinity, etc.—to its surrounding waters much more rapidly under conditions of marked stratification than ordinary diffusion or small scale turbulence could account for, and of course using up much of the energy of the moving current in the process. This they called "isentropic mixing"; it causes the Gulf Stream, for example, to dissipate a considerable part of its store of heat and momentum laterally into the neighboring coastal and Atlantic waters as it moves across the Atlantic. The conditions of stratification of the current are important, for Dr. Parr found considerable evidence that the isentropic mixing was the more intense as the ordinary vertical mixing became less (see *Jn. du Conseil Int. pour l'Explor. de la Mer,* v. XI, no. 3, 1936), *i.e.,* the greater the stability of the stratification the more the horizontal mixing. And it was of course implied that an analogous principle should hold for the free atmosphere.

Professor Rossby then took up the latter clue, and within two years has, with the aid of his able collaborators and students, applied it to a wide variety of practical and theoretical meteorological problems; the results, still just "beginning," already justify an extensive revision of the whole theory of the general circulation of the atmosphere and give promise that isentropic analysis of the atmosphere can be very useful in forecasting and in explaining many phenomena for which existing theories are alone insufficient.

It is too early to cite here the specific details of the work accomplished along these lines so far, but suffice it to say that the subject is being actively pursued along three fronts at once—by mathematical studies of the effects and forms of the mixing of jet streams of fluid into a rotating homogeneous pool of the fluid, the rotation being to simulate that of the earth; experiments to find the actual behavior of such jet streams in model tanks, which must serve to guide the mathematical analysis as well as check it; and the analysis of upper-air daily weather maps to find the actual flow patterns on isentropic surfaces, which are being studied for forecasting value as well as a guide and check on the mathematical and tank experiments. Enough has been learned from these studies to outline tentatively the probable or possible significance of isentropic motion and mixing in the general circulation and such related problems as that of the origin of cyclones and anticyclones of different types.

VALUE OF ISENTROPIC CHARTS

The first practical value of the daily upper-air isentropic charts was discovered by J. Namias at M.I.T. during 1937, *viz.,* that they make it possible to forecast thunderstorms in eastern U.S. in summer several days or more in advance, hitherto impossible (see *Bulletin of the Amer. Met'l. Soc.,* January, 1938). Also H. Wexler of the U. S. Weather Bureau notes the close relation of distribution of rainfall in different seasons in the United States to the accompanying pattern of isentropic flow in the upper air; and Dr. H. R. Byers, also of the Weather Bureau, finds some unique aids in general

daily forecasting on the isentropic charts. This is very encouraging since these charts have been made for only a short time now.

It is still necessary to find what all the patterns of isentropic flow are and get a physical mathematical explanation for them. The two aims should go hand in hand, mutually supporting one another, if possible, and that is what Professor Rossby and his collaborators are so far succeeding in doing; for the progress would be much slower if either the theoretical or empirical practical aspects were allowed to get out of close touch with each other. With a considerable staff of highly trained meteorologists working together on the various phases of this work, Professor Rossby has developed a concerted and fundamental research program in meteorology. Also it is gratifying to note that the U. S. Weather Bureau is taking up research in the same lines in its Air Mass Section in Washington, and its investigators co-operate closely with those at M.I.T. Most of the support for the work comes from the Bankhead–Jones Fund (administered for research by the U. S. Department of Agriculture) to the Bureau of Agricultural Economics and Weather Bureau for long-range forecasting, a project directed by Dr. C. F. Sarle with the aid of a steering committee of leading specialists in various institutions.

Isentropic analysis seems to give special promise for long-range forecasting because the daily isentropic flow patterns are apparently more stable and slow-moving than the usual "lows" and "highs" or "fronts" of the surface weather chart and because the isentropic flow seems to be more fundamental in the general circulation and thus should afford a more likely approach to the much needed physical basis for understanding the normal circulation from which the fluctuations that cause our changes in seasonal weather and climate depart. The best authorities recognize that empirical short-cuts to long-range forecasting are not and cannot be very fruitful in the long run, though they should be of limited use until the physical basis can be worked out and should be suggestive of leads for physical research. It may not pay therefore to spend such a large share of the funds for research for purely empirical and statistical studies unsupported and unchecked by serious physical studies, as is commonly the custom.

The Bureau of Agricultural Economics will publish in 1938 a survey and critical check of existing methods of scientific long-range forecasting, and Professor Rossby and collaborators will publish a volume on isentropic studies which will be milestones.

An interesting sidelight on the probable importance of isentropic studies is revealed by the fact that in November Dr. Hans Ertel, a leading European dynamic meteorologist, came to M.I.T. from Berlin to study the isentropic work and returned to start such studies in Germany.

The mistaken view may be held in some quarters that the new isentropic analysis will soon displace the air mass analysis that has been vaunted so much the last few years. This is not quite true, as the most ardent isentropists will admit, for the air mass analysis will remain very valuable in short-range (up to 36 hours) forecasting, especially for aviation, and the new methods really supplement the present ones rather than replace them. Both will have to be used in conjunction. However, it is quite possible that a theory of the general circulation based on isentropic mixing may replace much of the Norwegian (Bjerknes) wave-theory of cyclones and cellular hypothesis of the circulation; but much work in isentropic theory and analysis must still be done before that can be conservatively concluded.

WEATHER BUREAU DEVELOPMENTS

This long discussion of the isentropic developments does not mean to imply that nothing else of value has been done in 1937, but gives it the emphasis it deserves since it is only once in a generation that something so fundamental, original, and pregnant appears. Much other significant

work has been done in 1937, even though more routine or useful than original.

Special interest always attaches to the developments in the services of the Weather Bureau. The annual report of the Chief, Dr. W. R. Gregg, for 1937 reveals that the air mass analysis work was further extended but still limited by insufficient funds. WPA funds permitted tabulation of vast numbers of ocean weather observations from ships for making new charts of the ocean climate, and tabulation and computation for statistical correlations for long-range forecasting studies. Radiometeorographs of several makes were daily and fairly successfully released on Bureau contracts during the autumn of 1937 at Boston, Burbank, Calif. and Fairbanks, Alaska, while the makers continued improving the designs and performance of these instruments and colibration, receiving, and recording equipment for them. Many new airways weather-reporting stations were opened and airways forecast centers better staffed; field trucks and other additions to the fire-weather service were made; the river and flood work was greatly expanded and improved under the aegis of a new chief and the impetus of the recent bad floods; in many other matters relatively unspectacular the Bureau made steady growth or improvements in its manifold services.

In the summer and autumn of 1937 several Weather Bureau officials attended various foreign international meetings of meteorologists and official meteorological services, both in Europe and South America, indicating greater international co-operation on the part of the Bureau than for many decades past, a very commendable trend since meteorology depends so much on international exchange of observations and uniformity of methods.

METEOROLOGICAL INSTRUCTION

At New York University A. F. Spilhaus was added to the staff to teach advanced meteorology, bringing to four the number of institutions in North America giving first class professional instruction in meteorology. A new mountain meteorological observatory was opened by New York University and Renssalaer Polytechnic Institute with the cooperation of the Weather Bureau at Whiteface Mt., N.Y., which furnishes reports to airways four times daily and brings to three the number of mountain stations in the East. The others are Mt. Mitchell, N.C., and Mt. Washington, N.H. The Mt. Washington Observatory, incorporated in New Hampshire as a non-profit corporation for the support of the station, now has 400 members, and issues a bulletin. It is housed in a new building completed in 1937 by the Mt. Washington Railway Co., through the interest of its president, Col. H. N. Teague, and equipped through the generosity of many friends.

The American Meteorological Society continued its growth in membership to near the 1,000 mark and its monthly bulletin improved considerably in size and quality of contents, showing the steadily increasing interest in modern meteorology in this country.

SOIL CONSERVATION SERVICE RESEARCH

The work of the Soil Conservation Service research departments deserves great commendation for their progressive, thorough and intelligent character. Dr. C. W. Thornthwaite of the S.C.S. has two microclimatic projects, one in Oklahoma and one in Ohio, planned by him and under his direction. These have shown important facts as to the areas covered by rainstorms from one quarter hour to the next, which are of utmost value to hydrologists and soil-erosion students. Mr. Holzman of the S.C.S. has studied with the aid of upper air data the sources of moisture in rainfall, and concludes that local evaporation from the ground and from ponds is of minor consequence in determining the distribution of rainfall, since in the average (of a month or more) the dry polar air masses evaporate from the ground and carry away off the continent nearly as much mois-

ture as the moist oceanic air masses drop on the continent in the form of rain (the rest is run off). These facts led to a revision of the traditional conception of the hydrologic cycle which already most hydrologists have accepted.

PUBLICATIONS

Important papers on meteorology and climatology were published in the *Monthly Weather Review* each month through the year as also in the *Bulletin of the American Meteorological Society, Transactions of the American Geophysical Union, Journal of the Aeronautical Sciences,* and the *Technical Bulletin* (U. S. Department of Agriculture), October, 1937; *Geographical Review,* January, 1937; *Journal of the Royal Astronomical Society of Canada,* October, 1936–February, 1937, and others.

Among books published in this field in 1937 may be mentioned H. R. Byers, *Synoptic and Aeronautical Meteorology* (McGraw–Hill); G. T. Trewartha, *An Introduction to Weather and Climate* (McGraw–Hill); T. A. Blair, *Weather Elements* (Prentice–Hall); and H. I. Baldwin and C. F. Brooks, *Forests and Floods in New Hampshire* (New England Regional Planning Commission).

AMERICAN EXPLORATION

By Robert M. Brown

Professor, Rhode Island College of Education

ARCTIC

The Louise A. Boyd Arctic Expedition of 1937 began, during the early summer, its work of exploring the sea floor as far northwestward from Spitzbergen as ice conditions would permit. The vessel carrying the party was equipped with a sonic depth finder and after a month on sounding work the remaining members of the party, including Dr. Richard Flint, Yale University, geologist; Dr. Henry J. Oosting, Duke University, botanist, and his assistant, joined the vessel at Tromsö. In East Greenland, geomorphological, ecological and survey work were done and tide gauges were set up for records at various critical points. Work on glaciers at Finland and on Jan Mayen Island also engaged the party.

Clifford J. MacGregor of the Weather Bureau at Newark Airport sailed on *The General A. W. Greely* for a year's stay at Fort Conger on the coast of Grant Land, 82 degrees north latitude. The expedition is privately financed and organized and will not be participated in officially by the U. S. Weather Bureau. However, the Weather Bureau has loaned a full equipment of scientific instruments: thermometers, barometers, wind-measuring devices, balloons and observing instruments for high-altitude work, and meteorographs to be carried on the expedition's aircraft. Daily data will be transmitted to the Weather Bureau headquarters at Washington, D.C. The radio equipment carried by the expedition will make conversation with the Soviet polar "colony" easy, if the two parties want to talk to each other.

Donald B. MacMillan sailed from Gloucester, Mass. June 24, 1937 for his sixteenth Arctic expedition. The ten weeks trip included a study of the Baffin Land ice caps as remnants of the North American continental glacier, an examination of the fossils of Frobisher Bay, a game bird survey in Baffin Land, and a biological survey of Resolution Island. Resolution Island, heretofore mapped as a single island about 175 miles long and 50 miles wide, was found to consist of many islands, probably at least 500. Investigators with MacMillan included Martin J. Berger, Massachusetts Institute of Technology; Davis Potter, botanist, Clark University: Alfred O. Gross, ornithologist, Bowdoin College; V. C. Wynne-Edwards, zoologist, McGill University: Harold Peters, biologist of U. S. Biological Survey; and Kenneth

Sewell, anthropologist of Massachusetts Memorial Hospital.

NORTH AMERICA

C. J. Albrecht, Taxidermist of the Field Museum of Natural History, conducted an expedition during the summer of 1937 to the Pribilof Islands, near Alaska, when he collected fur seals for a proposed habitat group.

Ralph W. Chaney, University of California, and a research associate of Carnegie Institution, reported that from an Alaska gold mine was being taken hundreds of skulls, tusks, bones, hides, hair and even remnants of muscles of the mammoth, bison, horse, caribou, musk ox, lion and other animals. Of the animals only the caribou is found now in Alaska.

Llewellyn Williams, curator of Economic Botany, conducted The Field Museum, Chicago, Botanical Expedition to southeastern Mexico. From the Isthmus of Tehuantepec and parts of the states of Oaxaca and Vera Cruz, about 600 specimens of wood, 8,000 herbarium specimens, a large amount of palm material and many photographs were obtained.

A. C. Noé, University of Chicago and Field Museum's (Chicago) Research Associate in paleobotany, spent the summer of 1937 in a study of the flora of Panama.

Other expeditions included James Bond, Academy of Natural Sciences, Philadelphia, to study birds in the West Indies; William Beebe, New York Zoological Society, completing his twenty-fifth expedition to study marine life of Bermuda; Laurence L. Reeve, from the Philadelphia Academy of Natural Sciences, working on the Island of Mona; Robert Enders with others collecting mammals in Panama; Joseph W. Lippincott, collecting and photographing mountain sheep in Mexico; and Henry Pilsbry, making a study of the land shells of the West Indies.

SOUTH AMERICA

Emmet R. Blake, assistant curator of birds of the Field Museum of Natural History, Chicago, left in January, 1937 for a zoological expedition. Material for a habitat group of the rare and unusually interesting bird known as hoactzin was obtained as well as a large general collection of birds, mammals, reptiles and other kinds of animals of British Guiana and Brazil.

Richard T. Cox of the New York University physics department made an extended research visit in Para, Brazil, to study the eels whose ability to generate and discharge paralyzing jolts of electricity is a riddle of biophysics. Dr. Cox took pieces of apparatus calculated to deliver electrical discharges like those of the eels themselves. His plan was to put the eel into contact with the device and note the fish's reaction. Even more intimate studies of the electric eel's internal power plant and its workings are planned, such as could not be carried on under aquarium conditions but which may be possible in the field. With Dr. Cox is Mrs. Cox, as artist and general assistant, and Robert S. Matthews, biological student at Columbia University.

M. A. Carriker, Jr., of the Academy of Natural Sciences of Philadelphia Department of Ornithology, and Gordon Howes, of Toms River, N.J. have continued their detailed study of the bird migration in Bolivia, started in 1934. The study that the Academy is sponsoring in Bolivia is concerned with the distribution and migration of birds that fly north to that country during the warm months from Chile and Argentine, in much the same manner that birds in this country fly north during the spring migrations and south in the fall. In addition, the expedition is studying the habits of birds that nest in the high altitudes of the Andes during warm periods and seek the warm climate of the Amazon river valleys during the rigorous cold.

William B. Holden, American Museum of Natural History, New York, left late in the summer (1937) to carry on scientific explorations in the Amazonian jungles. The expedition, which it is expected will take about six months, plans an intensive study of the diseases and drugs of Indian tribes which live along the northern tributaries of the Amazon River. At the same time other members of the

party will collect reptiles, amphibians, small mammals and insects as well as botanical specimens. The section to be explored is the little known Sierra Akarai range of mountains in the southernmost portion of British Guiana along and within the Brazilian border. The party plans to go 150 miles up the Rupunnuni River and then overland 65 miles to the Kissikityn River, down the river by native dugouts until the Essequibo is reached, where the base camp will be established. In addition to Dr. Holden, the membership of the party will include A. C. Smith, New York Botanical Gardens; Robert Snedigar, American Museum of Natural History: William G. Hassler, photographer; Neil MacMillan, field assistant; and Orison W. Hungerford, radio engineer.

ASIA

Harold J. Coolidge, Jr., assistant curator of mammals at the Harvard Museum of Comparative Zoology, led the Asiatic Primate Expedition in Siam, Borneo and Sumatra in order to study the Asiatic anthropoid apes, especially the gibbon, in their native forests. Dr. C. R. Carpenter, Bard College, established his base at Chiengmai in northern Siam where he spent four months studying the social life of the gibbon. Another party used Jesselton, Northern Borneo as a base and made collections on Mt. Kinabalu: and still another party used Sandaken, Northern Borneo as a base and made studies and collections in the lowland forests on the east coast of the island. Later Dr. Carpenter will move his camp to the mountains of northern Sumatra where he will make studies of the orang-utan. The projects are financed by the Carnegie Institution, the Columbia University Council for Research in the Social Sciences, the Milton Fund at Harvard and by private donations.

Dr. Wilfred H. Osgood, Chief Curator of Zoology at the Field Museum of Natural History, Chicago, spent several months in French Indo-China during which time he collected some 500 mammal, bird and reptile specimens including material for several habitat groups.

Dr. G. Weidman Groff, professor of horticulture at Lingnan University, Canton, under the auspices of the National Geographic Society, led a group of scientists who explored the interior of semi-tropical Kwangsi Province, south China. Studies were made of little-known tribes in outlying regions, as well as of plants and animals. Photographic records were made and biological specimens were collected.

FAR EAST ISLANDS

The National Geographic Society and the Smithsonian Institution had a party in the field headed by Dr. William M. Mann of the National Zoological Park and accompanied by Mrs. Mann, Dr. Maynard O. Williams of the National Geographic Society, and Malcolm Davis and Ray Jennier of the National Zoological Park, to collect wild animals of Sumatra, Netherlands Indies and neighboring regions and to gather geographic and natural history information. The expedition carried, to present the zoological parks in the cities visited, a collection of North American animals rare in the Far East, including ten alligators, two jaguars, two mountain lions, three opossums, two raccoons, two black bears and five hell benders (large salamanders). Acquisition of mammals, reptiles, birds and a few fishes, only poorly represented in the National Zoological Park, was the primary object of the collectors, and some insects and botanical specimens were to be a secondary phase of the search. The party spent four months collecting in Sumatra, the Netherland island of Ceram, and possibly some other of the East Indies. It is equipped with special "mercy traps" and cases to carry small delicate animals, and heavy traps and cages for the larger animals will be built in the localities. A cargo of more than a thousand birds, beasts, and reptiles, representing a cross-section of the fauna of the region, was brought back to the United States and presented to the Park.

Dr. Hallam L. Movius of the Peabody Museum of Harvard and Dr. Hellmut de Terra, Associate Curator of Geology and Paleontology of the Academy of Natural Sciences and Research Associate of the Carnegie Institution of Washington, left, during October 1937, for Mandalay in Northern Burma, which will serve as a base of field operations. Here, with the co-operation of the Burma Division of the Geological Survey of India, the expedition will search the gravels along the banks of the Irrawaddy River for fossils of prehistoric man and animals. Stone Age tools have already been uncovered in this region.

Père Teilhard de Chardin, co-discoverer of Pekin Man, will join the expedition in Burma on Dec. 1, and with him two field trips will be made into the north above Myitkyina, which lies at the foot of the Chinese Alps, near the desolate wastes of Tibet. These field trips will serve to reveal the rôle played by the mountain making events and climatic changes that occurred during the process of human evolution in southeastern Asia.

From Burma, the expedition will travel by airplane to Singapore and Bandoeng, Java. There, joining forces with Dr. Ralph von Koenigswald, they will explore new sites along the Solo River, where last year Dr. von Koenigswald discovered the skull of what is probably the oldest human in the world, a baby of 700,000 years ago.

As Java is extremely rich with evidence of both prehistoric man and the animals that lived contemporaneously with him, it offers an opportunity for the expedition to compare the age of early man there with finds in other parts of the world. Particularly interesting to Dr. de Terra is the likelihood of an ancient land bridge that may have existed between Malaya and the Asiatic continent which would shed further light on early human migrations between India and Java.

Dr. de Terra's final scene of field work will be at the Philippines, where he will make a survey of the coastal plain near Manila that has been reported to be rich with fossils, which may be those of the same animals that were uncovered with Java and Pekin Man. If true, such a find would be most valuable in the study of animal migrations from southeastern Asia toward the New World.

While Dr. de Terra, director of the expedition, will concern himself primarily with the geological sequences and stratigraphy, and Teilhard de Chardin with paleontology, Dr. Movius' duties will be concerned with the collection of archeological and anthropological specimens.

Dr. Willard G. Van Name, Associate Curator in the Department of Living Invertebrates, American Museum of Natural History, started in September on a six months' trip to the Philippine Islands. In Manila, Dr. Van Name will investigate work in marine invertebrate zoology and allied subjects. In the island of Davno he will make collections for the Department, and he will visit Java before returning to the Museum.

SOUTH PACIFIC

The George Vanderbilt Expedition to the South Pacific for the Academy of Natural Sciences of Philadelphia, returned to New York July 18, 1937 with more than 20,000 natural history specimens of fish, reptiles, birds, mammals and plants. Special interest is centered in the fishes brought back, as one of the expedition's primary objectives was the assembling of a complete series of marlin, so that studies may be made of its distribution and breeding habits. It is honed that subsequent laboratory work will show a sequence of small fish in the collection that will range from about three quarters of an inch to one more than four feet in length. Mr. Vanderbilt, who left New York on the *Cressida* during January, 1937, was accompanied on the expedition by Mrs. Vanderbilt and by Mr. and Mrs. Samuel Jones, of New York. Ronald W. Smith, of the Academy, was in charge of collections, with Captain Bill Gray, of Palm Beach, who supervised the gathering of the marlin.

OCEANOGRAPHY

By Paul C. Whitney

United States Coast and Geodetic Survey

ATLANTIC OCEAN

Ice Observation and Patrol Service.—The United States Coast Guard continued the patrol of the north Atlantic steamer routes between Europe and North America in the vicinity of the Grand Banks. Dynamic topographic charts of the Grand Banks region were constructed and used by the patrolling cutters. These charts are made with a reference level of 1000 decibars and were based on three current surveys of the critical area in which oceanographic stations were occupied to a depth of about 1,400 meters for temperature and salinity measurements where the depth of water permitted. During the season 75 additional oceanographic stations which involved six sections approximately normal to the Labrador and Atlantic Currents were occupied. Observations of temperature and salinity extended to a depth of 2,000 meters.

Tide Observations and Hydrographic Surveys.—Along the coast from Maine to Florida 21 primary tide stations are maintained in operation by the Coast and Geodetic Survey for the purpose of hydrographic control, tidal research, and the determination of changes in the sea level. Comprehensive modern surveys of the Atlantic coastal shelf are now practically completed between the approaches to New York and Cape Henry and from the eastern end of Georges Bank to the vicinity of Nantucket Lightship. These surveys extend from the shore seaward to the 1,000-fathom curve and in some cases beyond.

The Hydrographic Office of the U.S. Navy completed a hydrographic survey of the north coast of Costa Rica from Port Limon to the Nicaraguan border. Eighteen dynamic oceanographic stations were occupied. This office is at present conducting a hydrographic survey of Boca Grande, main entrance to the Orinoco River, and also along the north coast of Colombia from Punta Baru southwestward to Golfo de Morrosquillo.

In co-operation with the American Geophysical Union of the National Research Council, the Hydrographic Office completed a gravimetric survey of the Lesser Antilles, West Indies. Continuous lines of sonic soundings for depth profiles were run over the entire course of 4,000 miles between the Canal Zone and the Virgin Islands.

The Woods Hole Oceanographic Institution continued its work in oceanographic studies of the waters between the coast-line of the United States and Bermuda, and in the eastern Caribbean Sea and Florida Straits. Temperature and salinity observations were made along several sections in this area. Three cruises of the *Atlantis* were devoted to testing the possibilities of seismic methods for determining the thickness of submarine sediments and also for the collection of bottom samples with the new explosive coring tube devised by Dr. Pigott.

PACIFIC OCEAN

Hydrographic Surveys.—Surveys were continued by the Coast and Geodetic Survey along the Pacific coast of the United States in the vicinity of the Santa Barbara Islands and off Cape Mendocino. Extensive areas were wire dragged and many submerged dangers to navigation discovered.

Surveys were continued in the vicinity of Unimak Pass and in the Aleutian Islands westward of the Pass in connection with charting the Bering Sea route to the Orient.

The ships of the United States Navy added many echo soundings to those previously obtained in their passages across the north Pacific. One occupied 10 dynamic oceanographic stations between San Pedro and Pearl Harbor.

Tide Observations.—Nine primary tide stations were maintained in continuous operation by the Coast and Geodetic Survey from California to Alaska and one in the Hawaiian Islands. Besides furnishing the necessary data for hydrographic surveys, the results of these observations are of basic importance in tidal research and in the determination of relative changes in elevation of land and sea.

The Scripps Institution of Oceanography made three oceanographic cruises off the southern California coast. On each cruise a large counterclockwise eddy was found off the coast. The Institution, through a gift from Robert P. Scripps, have received a new vessel for its work at sea. A comprehensive study in submarine geology has been commenced.

The Oceanographic Laboratories of the University of Washington continued oceanographic investigations in Puget Sound, Straits of Juan de Fuca, and off the coast of Washington. A series of studies was made at Dixon Entrance, and observations were made off the northwestern portion of Queen Charlotte Island.

Work was continued on the radium content of the ocean bottom specimens. Physical studies have included the construction of a new apparatus for investigating the penetration of various spectral bands in the waters of the north Pacific. Attention has been given to the distribution of the various nutrient salts and the distribution of dissolved gaseous nitrogen in the waters of the Pacific. A study of both the phyto- and zoo-plankton of the waters of the north Pacific is in progress.

GULF OF MEXICO

Three primary tide stations were kept in continuous operation by the Coast and Geodetic Survey. This Survey has completed hydrography between the Mississippi Delta and the 95th meridian from shore to slightly beyond the 100-fathom curve. Many interesting features have been discovered on the ocean bottom, and in addition to the utilitarian value, geophysics and related sciences have found data of great importance in these surveys.

ARCTIC OCEAN AND BERING SEA

The United States Coast Guard carried on, as conditions permitted, an oceanographic survey of parts of the Arctic Ocean off the west coast of Alaska in sections of the Bering Sea. The existence of eddies north of St. Lawrence Island and east, south and west of King Island seems definitely established. Several hundred temperature and salinity observations were made in these areas.

OCEAN BOTTOM SURVEYS

The comprehensive offshore surveys made during the last decade by methods developed in the Coast and Geodetic Survey have revealed in practically all regions on the coastal slopes a well dissected ocean bottom in place of the smooth regions hitherto supposed to exist. The submerged erosional patterns found have stimulated new thought directly influencing previous concepts of geology relating to ocean basins, about which so little has been known.

AMERICAN GEOPHYSICAL UNION

The annual meeting was held at Washington, D.C. April 28, 1937. The papers presented a review of the activities in the past year of the various Federal and educational institutions engaged in oceanographic work. In addition, one paper dealt with short period variations in oceanographic characteristics in the western north Atlantic; one on current measurements in the Georges Bank canyons; one on submarine canyons off the California coast; and a preliminary report on the north Atlantic deep sea cores taken with the recently devised explosive coring tube. These papers appeared in full in Part I of the *Transactions* of the American Geophysical Union, published by the National Research Council in July, 1937.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Assn. of Petroleum Geologists, Box 1852, Tulsa, Okla.

American Geographical Society, Broadway at 156th St., New York City.

American Meteorological Society, Blue Hill Observatory, Milton, Mass.

Appalachian Mountain Club, 5 Joy St., Boston, Mass.

Association of American Geographers, University of Pennsylvania, Philadelphia, Pa.

Explorers Club, 10 W. 72nd Street, New York City.

Geological Society of America, 419 W. 117th Street, New York City.

National Geographic Society, Washington, D.C.

Seismological Society of America, University of California, Berkeley, Calif.

DIVISION XXI

CHEMISTRY AND PHYSICS

PHYSICAL CHEMISTRY

By Hugh S. Taylor

Professor, Princeton University

GOLDEN JUBILEE

The year 1937 was a golden jubilee year of physical-chemical science for it was in February, 1887 that there was issued, for the first time, a journal devoted exclusively to physical chemistry. The *Zeitschrift für Physikaliche Chemie* has, in the intervening years, mirrored faithfully the tendencies and developments of this relatively new science. This was especially true some nine years ago when the journal was divided into two sections, one to contain publications in the classical physical-chemical tradition, the other to report the new work on the structure of matter and the elementary processes of chemical change. It is in this latter field that the more important physical-chemical developments are now occurring.

THE LIQUID STATE

Only in recent years has the difficult problem of formulating a theory of the liquid state come within the bounds of practicability. Contributions in this field formed the subject of a general discussion held by the Faraday Society of London published in January, 1937 with Frenkel of Leningrad, Bernal of Cambridge, Simon of Oxford and Eyring of Princeton as contributors. While Bernal is pessimistic with respect to continuity of liquid and solid state, Frenkel and Simon emphasize factors indicative of such continuity. According to Bernal a liquid differs fundamentally from a solid in that its configuration is not even approximately constant but is a function of the temperature and the pressure. Eyring pictures the liquid state as an ordered solid containing a number of holes. From the mean density of the liquid plus saturated vapor, which changes little up to the critical temperature, Eyring concludes that the free volume or the volume of the holes at any temperature is approximately equal to the volume of the molecules in the saturated vapor in equilibrium at that temperature. With Newton, Hirschfelder and Stevenson, Eyring has developed this concept of holes to give an equation of state for liquids applicable over the entire range from gas to liquid. The liquid so defined differs from a solid in that the surplus volume in one part of the liquid becomes available in another part without energy of activation appreciable as compared with the energies of thermal motion available. In its most recent form (*J. Chem. Physics,* 5,896, 1937) the model is applied to processes of fusion, viscous flow and osmotic pressure of binary liquid systems. Holes are used to complete the analogy between critical phenomena in systems of one molecular species and the critical solution phenomena of binary liquid systems.

With Ewell, Eyring has applied his theory of holes to the viscosity of liquids (*J. Chem. Physics,* 5, 726. 1937). Flow is treated as a problem in reaction kinetics in which the

elementary process is the passing of a single molecule from one equilibrium position to another past a potential energy barrier. The activation energy involves the formation of a hole into which the molecule can flow. This is associated with the energy of vaporization of the liquid and a theoretical equation developed which includes all the empirical equations of viscosity hitherto developed. These researches give, for the first time, a theoretical basis for the science of rheology, represented in America by the Society of Rheology, and providing a fundamental method of approach to problems of viscosity and flow in such varied media as petroleum fractions, glasses, and liquid metals.

LIQUID AND BUILT-UP FILMS

Twenty years ago Langmuir first developed the technique of measurement of insoluble liquid films, one molecule in thickness, on water surfaces, showing thereby the geometry of the film molecules, their length and cross-sectional area. Molecules containing polar groups with affinity for water were shown to orient themselves in the surface, polar groups in the water, the insoluble portions of the molecules forming the outer film surface. The technique of monolayers was developed by Adam and by Rideal, the latter having recently extended his investigations to the chemical reactions of such monolayers and their kinetics. The oxidation of unsaturated fatty acids, the hydrolysis of long hydrocarbon chain esters and lactones are among the reactions thus studied (see Alexander and Rideal, *Proc. Roy. Soc.*, A, 163, 70, 1937). Such reactions are of importance as type processes of interface reactions in biological systems.

In collaboration with Dr. Blodgett, Langmuir has, during the last three years, extended the monolayer technique to the production of multiple films on various materials, notably mixtures of stearic acid and metal stearates on various solid supports. Thus, on chromium plated polished metal surfaces, from a monolayer of stearic acid on the surface of water containing barium salts, or salts of other bivalent metals such as copper, films are built up by a dipping process. The first layer attaches itself by the carboxyl (COOH) groups to the clean solid surface when the metal plate is raised out of the water through the stearic acid film. The second layer attaches itself as the plate is lowered into the water, the third as it is raised again and so on. The dipping process serves to fold the monolayer back and forth on itself so that the molecules in successive layers are oriented in opposite directions. Films of any desired number of such layers can be built up by repeated dipping and withdrawal and, from about 40 layers on, a stepwise series having intervals of two molecular layers will reveal itself by the characteristic interference colors. The spacing of the layers can thus be measured optically or by X-rays. In the case of barium stearate the length is about 24.4 Angström units.

During 1937, in collaboration with Drs. Wrinch, Blodgett, Schaefer and Sobotka, Langmuir extended this technique to problems of biological interest, including the dimensions of protein molecules, multi-layers of sterols and adsorbed reagents on such layers. The specificity in the adsorption of digitonin, for example, on a series of sterols is shown to parallel the precipitability of these sterols by such a reagent.

The built-up films can be conditioned with various adsorbed materials such as aluminum or thorium salts which then permit the surface to adsorb other inorganic or organic substances from solution. Egg-albumin, Stanley's tobacco virus protein, diphtheria toxin and antitoxin, the enzymes urease, pepsin and trypsin are materials upon which preliminary studies have been made. The undiminished enzymic activity of urease thus spread on films has been demonstrated. This whole group of researches must be characterized as a major contribution in the field of physical chemistry, with especial applicability to biological processes.

REACTION KINETICS

Recent controversy as to mechanism in processes of thermal decomposition of complex organic molecules is being resolved by the experimental tests suggested by the rival theories. It can now be stated that such decompositions certainly occur in part *via* formation of free radicals and a sequence of radical-molecule or chain reactions (F. O. Rice). Evidence is also at hand to indicate that the primary process is, in part, the formation, by intramolecular change, of molecular products without chains (Hinshelwood). Data are accumulating to assess quantitatively the contribution of each to the total observed process. The chain theory of these processes has stimulated a whole series of studies of the kinetics of reactions in which radicals, principally hydrocarbon radicals, are introduced into reactive systems by processes of light absorption, ionization and thermal decomposition. Steady progress can be reported. That it will be slow is evident from the history of the hydrogen-chlorine combination, of which, during 1937, Bodenstein reported the final researches, the definitive results of approximately 25 years of continuous investigation, in many laboratories, of this relatively simple system of molecules.

The theoretical calculation of the velocities of chemical reaction by statistical mechanical calculations of the concentration of the activated complex (Eyring) or transition state (Polanyi and Evans) was the major topic of discussion by the Faraday Society in September. This theoretical approach has clarified our knowledge of reactions abnormally slow and abnormally fast on the basis of the classical collision theory of reactions. It has led to important studies on the effect of pressure on the velocity of chemical change in liquid systems with the revelation of large, hitherto unsuspected, pressure effects. The application of this new theory and the re-interpretation of the collision theory in the case of reactions in liquid systems and in processes of great biological importance, such as the denaturation of proteins, is at the moment in full swing.

ISOTOPES AND THEIR REACTIONS

The wave of effort in the field of deuterium (heavy hydrogen) research has greatly subsided. Deuterium continues, however, to furnish much valuable material in various branches; to the theoretical physicist in molecular structure, deutero-benzenes (Ingold et al) deuteroethylenes (de Hemptinne, Jungers et al); deuteroamines (Foerster and Jungers); to organic structural theory in the work of Bonhoeffer and his collaborators on the reactivities of the constituent hydrogen atoms in phenolic derivatives and in acetone; to biochemistry in the incorporation of heavy hydrogen in living matter (Bonhoeffer and Reitz).

Urey, by his concentration of the heavy nitrogen isotope on a large scale, has made it possible to study the metabolism of nitrogen compound in human and animal biology.

Of the many new nuclei produced by processes of atomic transmutation, most of which have interest from the standpoint of nuclear physics, one of peculiar interest to chemists is the product of bombardment of molybdenum by deuterons. Segré has concluded that the process yields masurium, element No. 43, announced along with rhenium, No. 75, by Noddack in 1925. While the latter has now become relatively familiar, masurium has not previously received confirmatory study. It seems definitely to be located by the transmutation studies.

Many more stages in the progress of physical chemistry might here be recorded, but limitations of space restrict the record of this jubilee year to those already cited.

PHYSICS

By Thomas H. Osgood

Professor, University of Toledo

GENERAL

The indexes of journals devoted to physics during the year 1937 will show that nuclear physics is by far the most popular field of investigation at the present time, even though no outstanding discovery has been made which might have focussed particular attention on this topic. Many new radioactive isotopes have been discovered, some with properties which may make them useful in related sciences, such as medicine and biology. Good evidence has been obtained for the temporary existence of a new negatively charged particle, intermediate in mass between an electron and a proton. This has come out of the study of cosmic rays whose origin is still a matter for speculation. In other branches of physics progress has been made in the detailed interpretation of phenomena. Work still continues on the precise values of atomic masses and the ratio of the charge to the mass of the electron; x-rays have contributed greatly to our understanding of the architecture of crystals, and to the behavior of atoms when they form part of a solid; there has been a reawakening of interest in the nature of the polished surfaces of solids, and in the general behavior of thin films of matter; the study of solids has become one of the most important, both from the academic and commercial aspects, for it is clear that the theoretical treatment of solids is now reaching a stage at which it should be able to predict the approximate properties of new alloys. This article will attempt to give an inkling of the developments which have occurred along these lines in the twelve months preceding October, 1937.

NUCLEAR CHEMISTRY

Some attention has been paid to the gamma rays which are emitted when fast neutrons traverse matter. These must not be confused with the gamma rays which are produced simultaneously with the beta-decay of an artificially-radioactive source. Typical experiments, such as those of Aoki (*Nature,* 139, 372), show that the atomic cross section for emission of gamma rays varies in a complex manner as the atomic number (Z) of the material traversed is changed. From Z=1 to Z=50 (Sn) the cross section grows at an ever increasing rate, then from Z=50 to Z=80 (Hg) is approximately stationary, and declines somewhat for very heavy atoms. This variation is quite different from that found by Dunning for the atomic cross section which is necessary to explain the absorption scattering of fast neutrons. Hence it is clear that the emission of gamma rays is only part of the result of absorption and scattering of these particles. Two other processes are suggested (a) the disintegration of nuclei, and (b) the emission of beta rays from the substances traversed.

Bloch has suggested that it ought to be possible to produce a partially polarized beam of slow neutrons by using magnetized iron blocks as analyzer and polarizer. The number of slow neutrons emerging through the analyzer should be larger if the magnetizations of the two blocks are parallel, than if they are antiparallel. This is approximately what is found, and the magnetic moment of the neutron is two nuclear magnetons. In a recent report Frisch, von Halban and Koch (*Nature* 139,1021) make an interesting extension of the experiment to determine the effective field which exists inside a plate of magnetized iron. The depolarizing field was replaced by a thin sheet of magnetized iron, and it was found that a sheet 0.15 mm. thick, with a magnetizing field of 2.8 gauss, was enough to depolarize the neutrons completely. Since the calculated induction was

of the order of 15,000 gauss, neutrons inside the thin iron sheet must have been acted on by at least $.03B$.

Amaldi and Fermi initiated the method of slowing down all the neutrons emitted from a source to thermal velocities by making them pass through large thicknesses of water; then they could be captured effectively by a rhodium detector. To arrive at the total number of neutrons emitted from a source, it is necessary to count the slow ones at various distances from the source, then to integrate the results. This has been done by Amaldi, Hafstad, and Tuve, who have set up tables, correct to about 20 per cent, for the numbers of neutrons emitted from various types of deuteron-activated sources. These should prove to be of great assistance to other workers who aim at quantitative data in the field of artificial disintegration.

Progress has been made in measuring the energies of the products of disintegration, especially gamma rays and positrons. These energies are best determined from cloud chamber observations of the frequencies and energies of recoil electrons or of pairs. Gaerttner and Crane (*Phys. Rev.* 52, 582) have used the former of these two methods in studying the reaction,

$$Li^7+H^1 \longrightarrow (\text{ultimately})\ He^4+He^4+\gamma$$

discovering that three and possibly four roughly monochromatic gamma rays are produced, with energies 17, 14.5, 11.5, and 8.5 Mev. The Radiation Laboratory of the University of California has sponsored a series of papers which deal with the formation and decay of radioactive isotopes, especially positron emitters. For example, Laslett analyzed the momenta of positrons from Na^{22} which grows during bombardment of Mg^{24} with energetic deuterons. While most unstable isotopes thus far manufactured have comparatively short periods, Na^{22} stands out with a period of about three years. Walke (*Phys. Rev.* 52, 400) has investigated the decay periods of scandium isotopes produced in the Berkeley cyclotron, after chemical separation from the parent species. He finds that there are four positron-emitting isotopes of atomic weights 41, 42, 43, 44.

An interesting case of multiple decay periods is reported from the University of Michigan. Indium has two stable isotopes, of mass 113 and 115 respectively but radioactive indium has seven distinct decay periods. This does not mean, however, that there are seven radioactive isotopes, for it turns out that In^{116} exists in two isomeric forms, decaying with periods of 54 minutes and 13 seconds respectively; similarly In^{114} has periods of 41 hours and 50 days; and the three isotopes at 111, 112, and 117 have one period each.

The importance of the energy spectrum of the positrons or electrons emitted during the decay of an artificially radioactive element lies in the necessity of balancing, from the point of view of energy, the equation which describes the nuclear reaction. Difficulties which arise here may be dependent partially on the properties of the hypothetical neutrino which is introduced into the theory to conserve energy and angular momentum. The best opportunity for a direct observation of the neutrino's effects will be in the recoil of light nuclei, but the list of the neutrino's properties, zero mass, zero charge, spin one-half, zero magnetic moment, imply that it will in any case be very difficult to detect directly.

Efficiency curves for nuclear reactions are curves which tell the relative number of new atoms of some certain isotope formed per incident particle, as a function of the energy of the bombarding particle. One of the most recent of these studies is by Williams, Shepherd and Haxby, who investigated the series of known reactions which occur when Li^6 and Li^7 are bombarded with deuterons. The efficiencies are, of course, small. For example, in one reaction, only one disintegration is found per 25,000,000 incident deuterons; and in another, 5×10^8 deuterons are required for one atomic transmutation. Such data are at present only approximate.

X-RAYS

The accuracy of direct determinations of h, Planck's constant, is usually inferior to the accuracy which characterizes determinations of relations between h and e, the charge of the electron. Values deduced from the Rydberg constant and e/m for negative electrons, from the position of the short wavelength limit of the continuous x-ray spectrum, and from the recently established value of e, give three relations between the two physical constants. Unfortunately, these three relations are inconsistent. A careful experiment has been performed by Du Mond and Bomnan (*Phys. Rev.* 51, 400) in the hope of smoothing out the discrepancy. They discovered that their painstaking technique merely rendered the difficulty more acute, and that their final results did little to reconcile the already existing discordant values of the e, h, ratios. Until it is possible to interpret spectrometer curves in terms of true line shapes, it may be wise to reserve judgment upon the discrepancies in question.

A valuable contribution to the theory and interpretation of the Compton modified line appears in a recent article by Du Mond and Kirkpatrick (*Phys. Rev.* 52, 419). An exposure of over 2,000 hours was given in order to record photographically the radiation scattered from helium at a pressure of 14 atmospheres. The general results of the investigation are that the structure and breadth of the modified line are in agreement with Du Mond's theory which regards the broadening as due to the proper motion of the scattering electrons. The experiments also show that the electron momenta in solids are considerably greater than in assemblages of free atoms—a conclusion which gives excellent support to modern theories of solids.

Valasek (*Phys. Rev.* 51, 832) has used his measurements on the x-ray spectra of alkaline earth sulphides and sulphates to deduce the energy levels of the sulphur ion in several of these solids. They are not the same as the energy levels in the free atom because of the binding energy of the crystal of which the ion forms part. The differences between the atomic levels and the crystal levels for an atom are usually described as a downward displacement and a broadening, meaning that in the crystal the electrons are more firmly held, and have not a unique energy, but a small range of permitted energies. Valasek shows that the present theories which give the amounts of displacement and broadening do not fit the facts in detail, though as a whole they give results which are correct.

COSMIC RAYS

The experts of the California Institute of Technology so reduced the weight of their recording apparatus and electroscopes that they were able to send unmanned balloons to a region where the barometric pressure was only 12.9 mm of mercury. What contributed greatly to the success of the flights was the use of newly-developed light-weight condensers to replace the batteries which formerly were necessary for renewing the electroscope's charge. Data obtained support the view that there are no alpha particles in primary cosmic rays, and corroborate the prevalent theory of shower-formation. The general idea of the "multiplication" theory of showers is based on the knowledge that "in nuclear fields, gamma rays produce pairs, and electrons lose energy by radiation. The formulae which have been deduced from the quantum theory give for the probability of these processes values which, for sufficiently high energies, no longer depend upon the energy of the radiation. Because of this, the secondaries, produced by a photon or electron of very high energy, will be nearly as penetrating as the primary, so that the primary energy will soon be divided over a large number of photons and electrons."

Shower particles have been observed in much detail in cloud chambers, and while positive and negative electrons are always present, evidence has been accumulating to show that showers are accompanied by a corpuscular radiation of very great

penetrating power. There have, indeed, been suggestions that a new type of particle must be recognized to account for the effects which are found. These speculations have led to special cloud chamber experiments by Neddermeyer and Anderson (*Phys. Rev.* 51, 884) and by Street and Stevenson to find out what energy losses such rays suffer when passing through a heavy plate of lead or platinum. It turns out that, in passing through enough material to absorb practically all the energy of positive or negative electrons in showers, these penetrating particles emerge with their initial energy relatively little diminished. The most likely solution of the difficulty is that here is actually met a new charged particle whose mass is larger than the electron's but smaller than the proton's. This would enable it to create frequent ions without great diminution in its total energy as it flies through matter, and would probably give it a specific ionization of about the amount which is observed. It must, however, have an ephemeral existence and, like the positive electron, must interact very easily with matter in such a way as to destroy its original identity.

How intimate the connection is between the earth's magnetism and cosmic ray intensity has been shown by observers who obtained records of the horizontal component of the earth's field during magnetic storms and of the simultaneous cosmic ray intensity. The variations appear to occur simultaneously all over the earth, if one may judge by the striking similarities between curves representing the effects in Europe and in the United States. Developments of these observations may be looked forward to as playing an important part in the analysis of the energy spectrum of the rays.

From time to time new theories of the origin of cosmic rays are put forward, all starting from astrophysical phenomena. Suggestions have been made that, if the components of a double star act as a magnetic dipole, then the rotation of the accompanying magnetic field will create an electric field large enough to give a charged particle an energy of the order of magnitude of that which is liberated during a shower. Such a theory of the origin of the rays, requiring as it does no redistribution of the matter in the universe, is in sharp contrast to the more widely accepted theories (e.g. Compton and Chou, *Phys. Rev.* 51, 1104) which would have the rays born during the explosion of primeval concentrations of matter, from which the galaxies have developed. The persistence of the rays since that time need cause no misgivings, for it was pointed out by Jeans that the effective absorption coefficient of the rays and the average density of matter in the present universe are such as to give to the rays an expectancy of life which is much longer than the accepted age of the universe.

THIN FILMS

During the early years of this century, Sir George Beilby developed the idea that the polished surface of a metal was a result of the flow of molecules as in the case of liquid. With the development of the electron diffraction camera as a tool for investigating such thin surface layers, some doubt was thrown on the existence of an amorphous layer on non-metals, for calcite, rocksalt, fluorite, to mention only a few, gave definitely crystalline patterns.

Some new evidence obtained by Finch indicates that, for specimens cut in random directions, some show crystalline, some amorphous surfaces, while others have a mixed structure. In the two cases of carborundum and iron, many earlier results have been vitiated by oxide coatings. An interesting sidelight on this possible formation of oxide films comes from the work of Bowden and Hughes (*Nature,* 139, 152) who investigated the temperatures reached during the process of polishing. The trick of the experiments was to use the sliding surfaces of the two metals as a thermocouple, under conditions simulating the polishing process. Local temperatures were found to be extremely high, even when the surfaces

were well lubricated. Hence the choice of polisher should be governed not by the relative hardnesses of substances at room temperatures, but by their relative melting points. Further, intense local heating will encourage oxidation. This oxidation hypothesis has been called upon to account for the fact that diffraction haloes from amorphous layers on different metal surfaces have much the same size for all metals. A test of this was made by Dobinski, by polishing metals under pentane or benzene, and then, with the surface still wet, transferring the specimen to a diffraction camera. He found that now the layers were different for different metals, and that the spacing of the atoms in the surface layer was close to that for the solid as a whole.

The experiment of reflecting x-rays from an artificial "crystal" built up by depositing successive layers of material on an optical surface has been tried many times, both with metallic and non-metallic multi-layers. Such artificial crystals always lack the resolving power of natural specimens because of the technical difficulty of forming a sufficiently large number of identical layers. Some years ago, Langmuir and Blodgett developed a process for manufacturing artificial crystals with a known number of layers by repeated deposition of monomolecular films of long chain organic compounds, and their product was very soon used, though without conspicuous success, in an attempt to make an absolute determination of x-ray wave-lengths. During the last 12 months artificial crystals built up in this way to as many as three thousand layers have frequently yielded fairly good x-ray spectra. The grating space of such a crystal can be computed from interferometer measurements. It may reasonably be hoped that soon there will be another way of checking x-ray wave-lengths on the absolute scale, to supplement the ruled grating measurements on which the accepted values of many atomic constants are based.

SOLIDS

On the basis of the current theory of solids, it is possible to explain the differences between conductors, semi-conductors and insulators, and the variation of electrical conductivity with temperature. When the theory is developed somewhat more rigorously, as by Slater (*Phys. Rev.* 52, 214) it is able to throw some light on the phenomena of superconductivity. From a consideration of the electronic energy bands which are likely to be occupied at low temperatures, it can be shown that as the temperature is raised, there should be a gradual but rapid increase in electrical resistance from a negligible value to what is regarded as a normal value. The theory also implies that those elements which have high values of the electronic specific heat should not show superconductivity, unless at temperatures lower than those at which experiments have yet been carried out. From one side the agreement with observation is good, for the transition metals, W, Fe, Ni, Pt, which have high values of the electronic specific heat, have thus far not been found to exhibit superconductivity. Mendelssohn points out, however, that even though Ta and Nb have higher electronic specific heats than Ni and Pt, yet they become superconducting at comparatively high temperatures. On the experimental side, Silsbee and two collaborators (*Jour. Res. Nat. Bur. Stand.* 18, 295) find that the transition from the superconducting to the normal state, whether caused by an increase of temperature, of external magnetic field, or of current, is not continuous, but includes a spontaneous increase in resistance followed by a slower decrease. Thus far the experiments relate only to specimens of tantalum and tin, in which large currents are flowing at the time of transition. The only explanation offered is a qualitative one which presumes that three stages rather vaguely defined occur successively, each one in turn becoming unstable and changing to another.

ORGANIC AND INORGANIC CHEMISTRY

By C. M. Suter

Associate Professor, Northwestern University

COMPOSITION OF THE ATMOSPHERE

In a careful redetermination of the oxygen and carbon dioxide content of air samples taken from widely separated points Carpenter (Carnegie Institution of Washington) found no appreciable variation in the concentrations of these substances in the atmosphere. The average values obtained were 0.031% carbon dioxide and 20.939% oxygen. It was observed that there was no measurable seasonal or yearly variation in atmospheric composition and that proximity to large consumers of fuel had no effect. The apparatus used in the determinations had been developed for a study of the changes in atmospheric air in a closed space brought about by the respiration of animals or of man.

COMPOSITION OF WATER

Interest in the isotopic composition of water continues. In a new determination of the amount of deuterium (heavy hydrogen) in Lake Michigan water, Gabbard and Dole (Northwestern University) have found that there is one atom of deuterium for every 6,900 atoms of ordinary hydrogen.

The earlier discovery by Dole (see The American Year Book, 1936) that there is a larger percentage of the heavy isotope of oxygen in air than in water has been confirmed by Jones and Hall (University of Wisconsin) by heating ordinary water with air to 1800° or higher. This yields water which is seven parts per million heavier than the original.

Contrary to the results of previous investigators Longsworth (Rockefeller Institute for Medical Research) has found that light and heavy water mix without appreciable volume change.

SEPARATION OF ISOTOPES

The successful separation of the isotopes of hydrogen and the usefulness of deuterium in following the course of chemical changes, particularly in physiological processes, has led investigators to attempt the more difficult task of separating the isotopic forms of elements having higher atomic weights. Lewis and MacDonald (University of California) have developed a process for effecting a partial separation of the isotopes of lithium based upon the difference in their electrode potentials. The existence of such a difference would require that when a solution of a lithium salt is shaken with a lithium amalgam the ratio of Li^7 to Li^6 differs for the two phases. The apparatus employed was a "fractionating column" 18 meters high and 4 mm. in diameter full of an alcoholic solution of a lithium salt flowing upward through which fell a fine spray of lithium amalgam. The lithium in the amalgam collected at the bottom was converted into the lithium salt and fed back into the column. In a run involving ten liters of amalgam the last samples contained lithium in which the concentration of Li^6 was 16.3%. In ordinary lithium 8% of this isotope is present.

A concentration of the heavier isotope of nitrogen has been effected by Urey and associates (Columbia University). Their process consists of pumping a 30% aqueous solution of ammonium sulfate into the top of a fractionating column; the ammonia liberated from this solution (by treatment with alkali) when it reached the bottom of the column was fed back into the bottom of the column and escaped at the top. At the end of a 13-day run the nitrogen of the ammonia contained 2.54% of N^{15} or over six times as much as in ordinary nitrogen. Since it is possible to analyze for N^{15} by a mass spectrometer to within 0.02% this concentration is sufficient to be of value in chemical and biochemical investigations.

Using a sample of ammonia with

an N^{14}/N^{15} ratio of 160, Schoenheimer and associates have synthesized glycine and hippuric acid and utilized these in feeding experiments with rats. It was concluded that hippuric acid can be absorbed without hydrolysis and that glycine may be directly utilized by the organism in the preparation of hippuric acid. These results are of importance in suggesting the future usefulness of compounds containing heavy nitrogen in investigations of metabolic changes.

FLUORINE COMPOUNDS

Organic compounds containing fluorine have been but little studied until recently. The discovery of the low toxicity of difluorodichloromethane (Freon) and similar substances by Midgley and Henne and their subsequent use as refrigerants has increased interest in aliphatic fluorine compounds. Henne (Ohio State University) has now developed a process for preparing fluoroform employing mercuric fluoride as the fluorinating agent. The stability of fluoroform is remarkable. It is decomposed only slowly by white hot silica and is inert toward boiling caustic solutions. It does react with fluorine, forming carbon tetrafluoride and hydrogen fluoride. Fluoroform is also inert physiologically to an unusual degree. An atmosphere made up of 80 volumes of fluoroform and 20 volumes of oxygen had no ill effects upon a guinea pig after one hour. The anesthetic effect of chloroform is thus completely absent.

Simons and Block (Pennsylvania State College) recently reported the preparation of a number of "fluorocarbons" by reaction of carbon and fluorine. The boiling points of these do not differ greatly from those of the corresponding hydrocarbons. Only one isomer was obtained for the four, five and six carbon compounds whereas two or more would be predicted.

Calloway (Fisk University) has found that alkyl and acyl fluorides take part in the Friedel-Crafts reaction in the usual manner, acyl fluorides being the least reactive and alkyl fluorides the most reactive in their respective classes. Aluminum fluoride has no catalytic activity for these reactions while zinc fluoride serves as a catalyst in some cases.

The direct replacement of hydrogen by fluorine has so far been effected in only a few cases. Replacement of chlorine by fluorine, however, occurs readily in the presence of a copper catalyst. Bigelow and co-workers (Duke University) report the conversion of hexachloroethane into difluorotetrachloroethane and other products by such a procedure. The first example of the addition of fluorine to an olefin bond was found in its reaction with tetrachloroethylene.

STEREOCHEMISTRY OF DEUTERIUM COMPOUNDS

Several attempts have been made to obtain optically active compounds or modify the optical activity of compounds by replacing ordinary hydrogen by deuterium (heavy hydrogen) atoms. Young and Porter (University of California and Mills College) after several attempts found the rotatory powers of 2-octanol and of α-methylbenzylamine to be less when the hydroxyl and amino hydrogens were replaced by deuterium. On the other hand the carbinol obtained by McGrew and Adams (University of Illinois) through catalytic reduction of ethylethtynylcarbinol with deuterium was optically inactive. Kinney and Adams have synthesized β, γ-dideuterovaline and β γ-dideuteroleucine for feeding experiments in comparison with the ordinary amino acids but they were apparently not resolved.

NATURE AND ORIGIN OF COAL

The investigation by Jeuttner, Smith and Howard (Carnegie Institute of Technology) of the amounts of mellitic acid obtained from the oxidation of various coals and cokes has provided clues to the history of several kinds of coal. It was concluded that anthracite has been formed at temperatures of the order of 700° and up. High temperature cokes gave the same results as graphite indi-

cating they are chiefly this. Oxidation of the products obtained by heating cellulose at temperature up to 400° gave acids comparable to those obtained from Pittsburgh seam bituminous coal. Bituminous coal from Franklin, Illinois; Fayette, Pennsylvania; and Harlan, Kentucky yielded approximately the same amounts of mellitic acid and hence the thermal conditions under which these coals were formed may be similar.

Catalytic hydrogenation of Pittsburgh seam coal under high pressure was found by Biggs and Weiler to convert 80% of it into hydroaromatic oils. Determination of the molecular weights of these oils showed that the carbon atoms present vary from 9 to 53 per molecule. The hydroxyl content corresponds to one oxygen atom for each three molecules of the hydrocarbons indicating that ether linkages enter into the structure of coal in a definite manner.

DISTILLATION OF VITAMINS FROM FISH LIVER OILS

By developing apparatus and methods for performing distillations under very low pressures, Hickman and associates (Eastman Kodak Company) made possible the separation of fractions that have a high vitamin A and vitamin D potency from cod liver oil and other fish liver oils. This is feasible because the major part of such an oil is a mixture of the glycerides of high molecular weight fatty acids which are much less volatile than the vitamins. Biological tests made upon various fractions obtained from cod liver oil showed that the vitamin activity of the original oil was not due to the free vitamins so much as to esters of the vitamins. By distillation alone it was possible to obtain fractions having a vitamin A potency as high as 500,000 units per gram while by saponifying the esters and redistilling, substantially pure vitamin was obtained having an activity above 3,000,000 units per gram. It is reported that equipment is already available for supplying some 10% of the demand for vitamin A in the United States. In addition to obtaining the vitamins, molecular distillation offers a means of separating the sterols from fats and oils. Cholesterol obtained in this manner is already on the market. It is furthermore possible to free fish oils from the componets responsible for their obnoxious odors giving a vitaminless odorless mixture of glycerides as the final product.

CRYSTALLINE VITAMIN A

It is reported by Holmes and Corbet (Oberlin College) that crystals of vitamin A have been obtained by fractional crystallization of the unsaponifiable fractions from several fish liver oils. The procedure consists in cooling the methanol solution containing the crude vitamin to the temperature of solid carbon dioxide (dry ice) and removing the successive fractions of crystals that separate when small amounts of water are added to the methanol. The crystals melt at 7.5–8° and have a physiological effect equivalent to about 3,000,000 international units per gram. Molecular weight determination and analyses tend to support the structure proposed earlier by Karrer and associates to explain the chemical properties of the vitamin. In Karrer's investigations the material used was an oil containing a high percentage of vitamin A. Although Kuhn and co-workers in Germany have synthesized a product which shows vitamin A activity no one has as yet prepared the pure substance in the laboratory.

VITAMIN E

Last year Evans, Emerson and Emerson (University of California) isolated from wheat germ oil and from cotton seed oil three hydroxy compounds having the biological effects of vitamin E, the anti-sterility vitamin; these were named α, β and γ-tocopherol and have the empirical formula $C_{29}H_{57}O_2$. Olcott and Mattill (State University of Iowa) had observed that the unsaponifiable fraction of certain vegetable oils shows antioxidant properties when added to lard. It therefore became

of interest to determine whether the antioxidant properties and vitamin E activity were characteristics possessed by the same molecules. This was found to be the case. However, the two characteristics vary independently, γ-tocopherol being the best antioxidant whereas α- and γ-tocopherol both have high vitamin E activity.

Fernholz (Merck and Company) has shown that pyrolysis of α-tocopherol yields durohydroquinone as one product. It seems likely that α-tocopherol is a monoether of this. Information concerning the nature of the alkyl group is awaited with interest.

COMPOSITION OF TUBERCLE BACILLI

The wax obtained from the avian tubercle bacillus has been found to differ considerably in composition from that found in the human variety. Reeves and Anderson (Yale University) have shown that hydrolysis of the wax from the avian bacillus yields a mixture of optically active hydroxy acids of high molecular weight whose structures are unknown, the secondary alcohols d-eicosanol-2 and d-octadecanol-2, and a water-soluble carbohydrate identified as trehalose. On the other hand the wax from the human tubercle bacillus gives, in addition to a mixture of fatty acids different from that isolated from the avian bacillus, a dihydroxy alcohol, phthiocerol, $C_{35}H_{72}O_3$, and a complex water-soluble polysaccharide. This last substance on hydrolysis gives d-arabinose, galactose, inosite, mannose, glucosamine and probably other simple monosaccharides. The avian bacillus wax has a number of characteristics in common with that isolated by Anderson and Pangborn from the timothy bacillus.

Seibert (University of Pennsylvania) has made a comparative study of the proteins obtained from the culture filtrates of five strains of human tubercle bacilli. The yield of protein was about 0.2 g. per liter of the medium. The nitrogen content of the protein samples was the same (14%) for four of the cultures and somewhat greater (15.2%) for the fifth. By the use of the skin test with tuberculous guinea pigs the tuberculin activity was shown not to vary greatly for the different strains.

CATALYTIC REACTIONS

An investigation of the catalytic activity of various metal halides by Grosse and Ipatieff (Universal Oil Products Company) has shown that the chlorides of beryllium, titanium, zirconium, natnium, thorium and columbium are effective in the presence of hydrogen chloride in bringing about the alkylation of benzene with ethylene to a mixture of the ethylbenzenes. These chlorides (like aluminum chloride) stand intermediate in their properties between the salt-like halides such as magnesium chloride and those of the non-metals. It was suggested that the part played by the hydrogen chloride consists in addition to the olefin followed by reaction of the ethyl chloride with benzene and regeneration of the hydrogen chloride. This seemed reasonable since, with an excess of hydrogen chloride, ethyl chloride is present among the products.

It was reported in 1936 that a low-temperature conversion of n-pentane into isopentane and other products was possible through the catalytic action of aluminum halides. Montgomery, McAteer and Franke (Gulf Research and Development Company) have found it possible to obtain an equilibrium mixture of n-butane and isobutane at room temperature by the use of an aluminum bromide catalyst, starting with either isomer. A period of about two months was found to be necessary for equilibrium to be established, the mixture then containing approximately 80% isobutane and 20% n-butane. The difference in thermodynamic stability of the two hydrocarbons is greater than predicted from the calculations of previous investigators.

Ipatieff and Komarewsky in an investigation of the hydrogenation of olefins with an iron catalyst in the presence of magnesium, zinc or alu-

minum chloride found that polymerization occurred simultaneously with reduction. Thus amylene was converted into a decane and isobutylene to 2,2,4-trimethylpentane and a dodecane.

In the presence of certain mixed oxide catalysts, of which zinc oxide-chromium oxide is probably the best, Sauer and Adkins (University of Wisconsin) have found it possible to reduce esters of unsaturated acids such as butyl oleate to the unsaturated alcohols. The yields in the best experiments were over 60% but because it is necessary to use over half as much catalyst as ester the method is not satisfactory for large scale operations. The only other method for bringing about a reduction of this type is by the use of metallic sodium and an alcohol.

CARCINOGENIC HYDROCARBONS

Since the isolation of a cancer-producing hydrocarbon from coal tar some years ago, investigations have been under way in a number of laboratories to find relationships between molecular structure and carcinogenic activity. In this country Fieser and associates (Harvard University) have been particularly active in this field.

One of the hydrocarbons which is most effective in producing transplantable tumors is methylcholanthrene. Fieser and Seligman two years ago reported a new synthesis of cholanthrene, and tests on mice showed this substance to be practically as effective as the methyl derivative. Fieser and Newman more recently have prepared 5,10-dimethyl-1,2-benzanthracene and 10-methylbenzanthracene; since these compounds are likewise active in producing tumors it becomes evident that the ring present in cholanthrene is not essential and that substitution at position 10- of the 1,2-dibenzanthracene nucleus is sufficient. On the other hand Fieser and Hershberg have found that 1,2-cyclopenteno-5,10-aceanthrene is not effective and hence it is necessary to retain the 1,2-benzanthracene nucleus. These results led Fieser and Hershberg to devise a new synthesis for 10-alkyl-1,2-benzanthracenes in order to determine whether or not the methyl compound is unique in this series. Newman has investigated the synthesis of some 9-substituted 1,2-bezanthracenes, and tests made with these show the 5,9-dimethyl derivative to be as active as methylcholanthrene while the 9-methyl compound is much less so.

Fieser and Seligman have synthesized 4,10-ace-1,2-benzanthracene, the last of the four possible ace-1,2-benzanthracene isomers of the strongly carcinogenic cholanthrene to be investigated. Preliminary tests show that the new compound produces ulcers in mice as quickly as does cholanthrene but no tumors have so far been observed.

In a study of certain hydroxy derivatives of 3,4-benzpyrene and 1,2-benzanthracene by Fieser, Hershberg, Long and Newman, compounds were obtained which have a slow and irregular carcinogenic action.

Akin and Bogert (Columbia University) have prepared several substituted, 1,2,5,6-dibenzanthracenes but reports on their carcinogenic potency are not yet available.

STEROLS

Rapid progress has been made in investigating the interrelationships and properties of the sterols, particularly the sex hormones. Marker (Pennsylvania State College), Kamm (Parke Davis and Company) and their associates have been able to establish a structural relationship between progesterone, the female sex hormone, and androsterone, the male sex hormone, by converting *allo*-pregnandione, a reduction product of progesterone, into androstanedione, an oxidation product of androsterone. The *allo*-pregnandione needed for this series of reactions was obtained by oxidation of a mixture of pregnandiol and *allo*-pregnandiol isolated from human pregnancy urine. Interestingly enough progesterone apparently is not present in human pregnancy urine since, in an examination of the sterol fraction from 10,000 gallons of urine, none was found. It has been possible to isolate the compound *epi-allo*-pregnanol-2-one-20, however, which may

be looked upon as an intermediate in the reduction of progesterone to allo-pregnandiol. This newly discovered component occurs to the extent of 1 to 2 mg. per gallon of urine. An investigation of its physiological activity revealed the surprising fact that it possesses male hormone activity to about the same extent as androsterone, the male sex hormone. It has been synthesized from 3-chloro-*allo*-cholanic acid. Pregnanolone, an isomer of *epi-allo*-pregnanolone and apparently an intermediate in the conversion of progesterone to pregnandiol, also has been isolated from pregnancy urine, but is present in smaller amounts. Methods have been developed for synthesizing both compounds from pregnandiol and pregnandione.

In the irradiation of ergosterol with ultra-violet light the primary product is lumisterol. Since it seemed possible that this might be epi-ergosterol, a stereoisomer of ergosterol, Marker, Kamm, Laucius and Oakwood have synthesized the epi-ergosterol by the reduction of ergostatrienone with aluminum isopropylate. The synthetic product differs from lumisterol, eliminating this structure for the irradiation product.

Owen and Sherman (University of Wisconsin) have calculated the activation energy for the conversion of ergosterol into calciferol (vitamin D_2) assuming various mechanisms and conclude that the value lies between 72 and 93 kilocalories. The longest wavelength of light which will bring about the conversion is 3100 A° which corresponds to 92 kilocalories.

Wallis, Fernholz and Gephart (Princeton University) have found that the action of potassium acetate upon cholesteryl p-toluenesulfonate in acetic anhydride solution gives the acetate of a strongly dextro-rotatory isomer of cholesterol. The difficulty with which this compound is reduced and its inertness to perbenzoic acid and bromine led them to postulate a molecular rearrangement and formation of a bridged ring in the potassium acetate reaction. Ford and Wallis were later able to demonstrate that the abnormal ethers reported earlier by Stoll are derivatives of this *i*-cholesterol as the new compound has been designated.

ISOMERISM OF THE 2-PENTENES

In 1928 Kharasch and Darkis (University of Chicago) advanced the hypothesis that derivatives of ethylene could exist as electronic isomers. This was based upon the variation in properties of the bromopentanes and dibromopentanes prepared by the addition of hydrogen bromide and bromine to samples of 2-pentene obtained from various sources. By a study of the 2-butenes by electron diffraction methods Brockway and Cross (California Institute of Technology) concluded that the isomer boiling at 3° is the cis compound. The trans isomer boils at 0.3°. This is in agreement with determinations carried out earlier by other methods. Lucas and Prater (California Institute of Technology) have now synthesized the cis and trans 2-pentenes by methods paralleling those used for the cis and trans 2-butenes and have compared the properties of the products obtained when hydrogen bromide and bromine are added to the two 2-pentenes. They conclude that the variations in physical properties of these products observed by other investigators can be accounted for by the presence of varying amounts of cis-2-pentene, trans-2-pentene and 1-pentene in the olefin samples and that at present there is no experimental basis for the electronic isomerism hypothesis.

WALDEN INVERSION AND MOLECULAR REARRANGEMENTS

An investigation of the pinacol rearrangement of the *cis*- and *trans*-1,2-dimethylcyclohexanediol-1,2 by Bartlett and Pöckel (Harvard University) has contributed much to the theory of this reaction. The transpinacol when boiled with 20% sulfuric acid gives a 78% yield of 1-methyl-1-acetylcyclopentane while the cis isomer yields 2,2-dimethylcyclohexanone as the sole product. These results are not satisfactorily explained by the intermediate existence of a carbon surrounded by only six electrons,

the so-called open sextet, as this should lead in each case to the formation of a mixture of isomers or to the shift of the carbon bond nearest to the position from which the electron pair is missing. Actually that carbon bond shifts which is nearest in space to the opposite side of the atom from which the hydroxyl group (and the electron pair) is abstracted. Apparently the carbon atom which loses the hydroxyl group is "turned inside out," an indication that the loss of hydroxyl and shift of the carbon linkage occur simultaneously rather than successively.

This conception of the nature of the pinacol rearrangement has been extended to explain the Wagner-Meerwein rearrangement so frequently met in the terpene series. Here too the results were found to be more in accord with the idea of a simultaneous loss of a negative group and the shift of a carbon bond than the intermediate existence of an "open sextet." Thus in the conversion of camphene hydrochloride into isobornyl chloride the product expected on the basis of the open sextet theory would be bornyl chloride which is not formed in any appreciable amount except through the slow isomerization of the isobornyl chloride. A recalculation of the data of Meerwein and van Emster on the kinetics of the rearrangement indicated that either a second order or three-halves order reaction occurs rather than the first order change advocated by Meerwein.

RING STRUCTURES OF GLYCOSIDES

A new method for determining the ring structures and configurations of glycosides has been developed by Jackson and Hudson (National Institute of Health) as a result of their studies on the oxidizing action of hypobromites and of periodic acid on sugar derivatives. The preferred procedure consists in the cleavage of the glycoside and in the case of pyranosides the elimination of a carbon atom through the action of periodic acid to produce a dialdehyde. Oxidation of the dialdehyde by bromine water in the presence of a slightly soluble carbonate yields the salt of a dicarboxylic acid whose structure indicates the structure of the original glycoside. The same diglycolic acid was obtained by oxidizing four different alpha-methyl hexosides (derivatives of d-mannose, d-glucose, d-galactose and d-gulose) proving that these are all of the pyranoside type. Another acid was obtained by oxidation of the alpha-methyl glycosides of d-arabinose and d-xylose and its optical antipode resulted from the beta-glycosides showing that these all have the pyranoside structure. Another methyl d-arabinoside is known and oxidation of this produces the acid also obtained in the oxidation of the glycosides of the hexoses. This last d-arabinose derivative must then have the furanoside structure and the alpha configuration. Further important applications of this method for determination of the structures of carbohydrates derivatives are to be expected.

NEW LOCAL ANESTHETICS

A comprehensive series of papers by Adams and co-workers (University of Illinois) describing the synthesis and anesthetic properties of many compounds containing an aminophenyl group has just appeared. Esters of p-aminobenzoic acid of the procaine type were found to have increased toxicity and increased anesthetic effect if the molecular weight of the ester group is greater than in procaine irrespective of whether this is due to increasing the length of the polymethylene chain between carbon and nitrogen or by changing the alkyl groups on the nitrogen. In an investigation of aminophenyl-2-oxazolines the meta-amino compound was found to have a toxicity only one third as great as procaine while its anesthetic effect is nearly the same. However, the instability of the oxazolines in boiling water or upon long standing at room temperatures decreases their practical value. Amino-2-pentoxazolines have anesthetic activity but their toxicity is too high and their solubility in water too low for them to have practical value.

Aminophenylthiazolines and thiazines which are sulfur analogs of the oxygen compounds already mentioned are even less soluble in water. Aminophenyloxazoles and thiazoles were found to possess local anesthetic action but their solubility in water is also small. Although these investigations did not develop an anesthetic superior in every respect to procaine the information obtained regarding relationships between molecular structure and physiological activity is valuable.

ELECTROCHEMISTRY

By Colin G. Fink

Professor, Columbia University

ELECTRODEPOSITION

During 1937 the tendency throughout the electroplating art was the complete elimination of polishing and buffing of the articles after plating. In other words, plating baths have been developed which will produce a mirror surface in the bath and this plate needs merely washing and drying. A dozen different metals and alloys can now be plated in this fashion, whereas formerly chromium was the only one. Noteworthy, too, in the electrodeposition art is the development of colored deposits, many of which are highly artistic and attractive. Thus the United Chromium Inc. has marketed "Electrocolor" copper plate; any color of the rainbow can be produced. The New Jersey Zinc Company has a process for colored deposits on zinc by employing plating baths containing salts of aluminum, zinc, tin, beryllium, chromium, and tungsten.

With the return of gold as a predominant metal in the jewelry trade, improved processes were developed for the electrodeposition of gold on a wide variety of basis metals and also upon artistically designed articles made from several of the new plastics.

Electro-tin plate has become an established commercial product, many miles of strip steel being processed. The final product has a mirror bright finish as it leaves the last bath, requiring no polishing.

Patents were granted to Harold Hibbert and Willard L. Reinhardt for a more efficient storage battery plate comprising the addition of about ½ of 1 per cent lignin derivatives to the lead oxide.

THE ELECTRIC FURNACE AND ITS PRODUCTS

The most important development in the electric furnace field is the introduction of a new process for making magnesium metal. Magnesium oxide and carbon are heated in the electric furnace and, with the aid of hydrogen gas, the magnesium metal is protected against reverting to oxide or carbide. W. S. Landis of the American Cyanamid Company reported at length on this process before the Electrochemical Society at its October meeting. Most of the calcium metal turned out today in America is an electric furnace product, rather than a fused salt product, as it has been for years in the past. The St. Joseph Lead Company has successfully operated its electric furnace for smelting zinc ore, replacing the old fuel-fired furnace process.

FUSED ELECTROLYTES

The Aluminum Company of America has changed the power equipment of its large Alcoa plant, installing Allis-Chalmers mercury arc rectifiers in place of the old dynamic equipment. This instance is merely one of a number of others, the tendency being throughout the electrochemical industry to substitute rectifiers in place of rotary converters. The aluminum coating of steel by the Fink process was in commercial operation at Knoxville, Tenn. throughout the year.

ORGANIC ELECTROCHEMISTRY

Increased interest and activity have been displayed in the development of electrochemical processes for the production of a variety of organic

products. H. Jermain Creighton has commercialized the reduction of sugars to the corresponding alcohols. In one instance, a solution of glucose is reduced to hexahydric alcohols. One of the alcohols, Mannitol, is nitrated to a valuable explosive. Another alcohol is Sorbitol. An important derivative of this alcohol is ascorbic acid or vitamin C.

ELECTRONICS

The Petroleum Rectifying Company of California has applied electrical precipitation to the elimination of finely divided carbon particles suspended in oil.

The art of applying mirror bright surfaces on various non-conductors has developed into an industry of commercial proportions. Aluminum and rhodium mirrors of high intrinsic reflectivity are being regularly produced. Applying the wet method, the Birdseye Electric Company manufactures a tungsten lamp with an inside reflector of silver. The general trend in the electric lighting field has been away from the incandescent lamp to lamps based on the fluorescent principle. The inner wall of the new lamps is coated with the fluorescent salt such as willemite or calcium tungstate. This coating is activated by an electric discharge passing through an inert gas at low pressure contained in the tube. The light is very easy on the eyes.

POWDER METALLURGY

A field which has an indirect bearing on electrochemistry is powder metallurgy which, during the past year, has made great strides. Various metals and alloys can be produced by compression of the powdered constituents followed by heat treatment. Alloys heretofore difficult or practically impossible to make can be made without much trouble. Thus, for example, alloys of metals with little affinity for each other, such as copper or silver, with iron, or alloys of metals with widely different melting and boiling points are easily produced in this fashion.

PROBLEMS AWAITING SOLUTION

Numerous problems in electrochemistry still await solution: a better diaphragm for the alkali-chlorine cells; metallic electric resistors that will operate for many hours at 1750°C.; a corrosion resistant steel that will sell for less than five cents per pound; a storage battery that has but little weight and that can be charged in a few minutes; an electric lamp that will operate at 90 per cent light efficiency; and many others.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Chemical Society, 728 Mills Bldg., Washington, D.C.

American Electrochemical Society, Broadway and 117th Street, New York City.

American Institute of Chemical Engineers, Bellevue Court Building, Philadelphia, Pa.

American Institute of Physics, 175 Fifth Ave., New York City.

American Microscopical Society, Kansas State College, Manhattan, Kan.

American Physical Society, Columbia University, New York City.

American Society of Biological Chemists, University of Michigan, Ann Arbor, Mich.

Association of Official Agricultural Chemists, Box 290, Penn. Ave. Station, Washington, D.C.

Copper and Brass Research Assn., 420 Lexington Ave., New York City.

National Research Council, 29 W. 39th St., New York City.

Society of Chemical Industry, Pratt Institute, Brooklyn, New York City.

Synthetic Organic Chemical Manufacturers Assn., 260 W. Broadway, New York City.

DIVISION XXII

BIOLOGY

ORGANIC EVOLUTION AND GENETICS

By Myron Gordon

Zoological Laboratory, Cornell University

CHANGE IN STUDY METHODS

The change in the methods of studying organic evolution is outlined by Dr. L. C. Dunn, professor of Zoology in Columbia University, in his introductory remarks for the outstanding 1937 contribution to this study—the book, *Genetics and the Origin of Species* by Theodosius Dobzhansky. Professor Dunn said: "Forty years ago evolution was a problem in history, and in *From the Greeks to Darwin* H. F. Osborn traced the origins and development of the idea of gradual change as the means by which the world and its inhabitants had assumed their present forms. It was not only the ideas and theories which were studied as history; the facts of evolution itself were shown to be determined by changes in the past history of the earth. The essence of Darwin's theory was just this, and the efforts of biologists were concentrated on describing as completely as possible this record of the past.

"But description and reconstruction fail to satisfy for long even the most ardent historians of nature and it was Darwin's second great service to have focused the attention of biologists upon the forces that caused the changes and particularly upon the problem of what agencies brought about and maintained the diversification of animals and plants into distinct species. His own theory of natural selection, by appealing to two occurrences of which details were quite unknown—the origin of new variations in animals and plants and the perpetuation of these by heredity—served as a great stimulus and provided much of the motivation for biological research in the period which followed 1859. There were at that time, however, no reliable methods by which these two problems could be studied. The history of genetics since the rediscovery of Mendel's principles in 1900 is a history of the development of just such methods, and it is possible now to take stock of what these methods have done to improve our understanding of what has been, in spite of all research, so great a mystery—the origin of species."

The importance of genetics for a critical evaluation of theories concerning the mechanics of evolution is recognized, says Dr. Th. Dobzhansky, professor of Genetics of the California Institute of Technology. In his book he presents a discussion of the mechanisms of species formation in terms of the known facts and theories of genetics. He admits that some writers claim that evolution involves more than species formation and says that a geneticist has no choice but to confine himself to micro-evolutionary phenomena that lie within reach of his method, and to see how much of evolution in general can be adequately understood on this basis.

In his opening chapter, Dr. Dobzhansky says: "The principal tenet of the evolutionary doctrine is that the living world as seen by us at present has not always been as it is now; what we study at our time level is a

cross-section of the phylogenetic lines, the beginnings of which are lost in the dim past. But evolution is a process of change or movement. Description of any movement may be logically and conveniently divided in two parts: *statics,* which treats of the forces producing a motion and the equilibrium of these forces, and *dynamics,* which deals with the motion itself and the action of forces producing it." There are forces which bring about changes in the genetic composition of populations (evolutionary statics) and then there are the interactions of these forces in race and species formation and disintegration (evolutionary dynamics).

The mechanisms of evolution as seen by Dr. Dobzhansky, in barest outline are as follows: "Gene changes, mutations, are the most obvious source of evolutionary changes and of diversity in general. Next come the changes of a grosser mechanical kind involving rearrangements of the genic materials within the chromosomes. It seems probable at present that such rearrangements may at least occasionally entail changes in the functioning of the genes themselves (position effects), since the effects of a gene on development are determined not only by the structure of that gene itself but also by that of its neighbors. Finally, reduplications and losses of whole chromosome sets (polyploidy) are important as evolutionary forces, especially among some plants."

Dr. Dobzhansky continues his outline by pointing out that mutations and chromosomal changes are only the first stage of the evolutionary process and these changes are governed entirely by the laws of the physiology of individuals. Once produced, mutations are injected in the genetic composition of the population, where their further fate is determined by the dynamic regularities of the physiology of populations. Selection, migration, and geographical isolation mold the genetic structure of populations into new shapes, in conformity with the secular environment and the ecology, especially the breeding habits, of the species. This Dr. Dobzhansky regards as the second level of the evolutionary process. The third level is a realm of fixation of the diversity attained. He points out that races and species as discrete arrays of individuals may exist only so long as the genetic structures of their population are preserved distinct by some mechanisms which prevent their interbreeding. The origin and functioning of the isolating mechanism constitute one of the most important problems of the genetics of populations.

The role of gene mutation in evolution is discussed. However different may be the mutation rates of different genes and in different organisms, we are justified in concluding that the mutation process is constantly going on. If this process is allowed to progress unchecked, the species must eventually change in the direction of the greatest mutation pressure. Natural selection is the mechanism that counteracts the mutation pressure.

"RACE"

The point of view of the geneticist on the problem of "race" is important in these politically unstable times. Professor Dobzhansky states: "An endless and notoriously inconclusive discussion of the 'race problem' has been going on for many years in the biological, anthropological, and sociological literature. Stripped of unnecessary verbiage, the question is this: Is a 'race' a concrete entity existing in nature, or is it merely an abstraction with a very limited usefulness? To a geneticist it seems clear enough that all the lucubrations on the 'race problem' fail to take into account that a race is not a static entity but a process. Race formation begins with the frequency with which a certain gene or genes becomes slightly different in one part of a population from what it is in other parts. If the differentiation is allowed to proceed unimpeded, most or all of the individuals of one race may come to possess certain genes which those of the other race do not. Finally, mechanisms preventing the inter-

breeding of races may develop, splitting what used to be a single collective genotype into two or more separate ones. When such mechanisms have developed and the prevention of interbreeding is more or less complete, we are dealing with separate species. A race becomes more and more of a 'concrete entity' as this process goes on; what is essential about races is not their state of being but that of becoming. But when the separation of races is complete, we are dealing with races no longer for what have emerged are separate species."

POSITION EFFECTS

A large chapter in the relationship of genetics to the origin of species is concerned with the many types of chromosomal changes that have been discovered in closely related species and races of organisms. Sometimes the changes are small, sometimes great, but on the whole they have been explained satisfactorily on the assumption that inversions, translocations, and probably deficiencies and duplications occur in the phylogeny. And it has become general to regard chromosomal changes as one of the mainsprings of evolution. Professor Dobzhansky points out that, although inversions and translocations change the order of the genes, they do not change either the quality or quantity of the gene complex, yet a phenotypic change is often brought about. This phase of cyto-genetic research has recently emerged as a topic of great theoretical importance. The discovery of "position effects" on genes shows that phenotypical effects may be produced not only by gene mutations and by reduplications and losses of genes, but also by alterations in the location of the genes within a chromosome.

There is the following statement of Dr. Dobzhansky on position effects: "A rapidly growing amount of evidence indicates that the genes are not quite as impregnable and impervious to the influence of their neighbors as has been thought. The effect of a gene on development is a function of its own structure as well as of its position in the chromosome. A change of the linear order of genes in a chromosome may then leave the quantity of the gene unaffected, and yet the functioning of the genes may be changed."

The importance of the concept of position effects may be appreciated by the following remarks: "To what extent the differences between such species as *Drosophila pseudoobscura* and *Drosophila miranda* (see THE AMERICAN YEAR BOOK for 1935, 1936) are due to position effects is a matter of speculation; the greatly different gene arrangements in these species may be responsible for many alterations in the morphological and physiological properties of their carriers. In any event, position effects show that gene mutations and chromosomal changes are not necessarily as fundamentally distinct phenomena as they at first appear."

Professor Richard Goldschmidt of the Department of Zoology, University of California, and formerly director of the Kaiser Wilhelm Institute in Germany, has gone far ahead in his interpretation of the position effects and related phenomena, according to a special article in *The New York Times* of Dec. 5, 1937 which was written by William L. Laurence. According to this report, the professor accepts the view that "gene mutations and position effects are one and the same thing." It is further said that "there are no genes existing as stable units which can be moved from place to place without losing identity, each of them controlling some specific hereditary trait. Instead, it is the chromosome as a unit that controls the mechanism of heredity. The chromosome, according to Dr. Goldschmidt, is a giant chain molecule and all that matters in heredity is its pattern. Every change in its pattern produces mutations."

According the the headlines by William L. Laurence, "Gene Role in Heredity Denied; Chromosome Pattern Held Key" and a subhead "Prof. Goldschmidt Reports That Observation of Fruit Flies in California Discredits Long-Accepted Scientific View," the impression is gained that

the entire gene theory of heredity is about to be discarded. In reality, as the separate effects of genes have been detected and studied, appreciation has been developing as to their concerted effect in the chromosome.

It seems that future work on the structure of the chromosome pattern and the specific relationship of the genes to the pattern will reveal the true architecture of the chromosomes and its relationship to the individual characters, the characters that distinguish races and species.

EXPERIMENTAL POPULATIONS

In a joint symposium on experimental populations held by the American Society of Zoologists and the Ecological Society of America at Atlantic City towards the end of 1936, a number of papers were presented and have since been published in the *American Naturalist*. The importance of these papers towards the general subject of Organic Evolution and Genetics may best be expressed in the words of one of the contributors, Dr. Raymond Pearl of the Johns Hopkins University: "The fundamental problems of population are biological problems, because they are a part of the much broader and deeper problem of organic evolution. It has been said, and pregnantly, that in final analysis the problem of evolution is a problem of birth rates and death rates and nothing more." Professor Pearl's paper (*American Naturalist* 71:50–68) "On Biological Principles Affecting Populations: Human and Other" states that out of the work on the problems of populations in humans and other organisms a number of broad generalizations have emerged. The significant feature is that the biological principles underlying population phenomena are fundamentally identical in man and in other animals. He says: "It surely is no accident that the normal growth of populations of men and of a wide range of extremely diverse lower organisms is accurately described by the same general type of curve, the logistic."

Professor Pearl's definition of a population is that it is a group of living individuals set in a frame that is limited and defined in respect of both time and space. The biology of populations is concerned with a knowledge of groups as wholes. The study aims to describe the attributes and behavior of groups as such and not as the simple sum of the separate attributes and behavior of the single individual organisms that together make up the group.

There are but three outstanding characteristics of populations as whole groups. The first is the *size*. It is the total absolute number of individuals composing a given population at a particular time, or the number of individuals at that time in proportion to the size of the spatial framework in which the population exists.

The second characteristic of populations is their *growth*. This is measured by the change of size with time in either the positive or negative direction. It rests upon the fundamental variable of fecundity, fertility and life duration. In human populations the rate of growth in a particular periods is closely correlated with social economic behavior and in extremely complex ways. In infra-human (experimentally susceptible) populations, in nature, the rate of population growth at a particular time may be associated with abrupt changes in habits and behavior of great significance evolutionally, particularly in relation to what is called the "Balance of Nature."

The third feature of populations is their *quality*. This is a convenient term to designate the genetic constitution of the population, or, put in another way, the frequency distribution in absolute or relative terms of the qualitatively different genes represented in the group.

Professor Pearl points out that the human population has had a steady slow growth from recorded time to about 1600, then owing to advance in knowledge there has been a terrific acceleration in the growth of human population, and the end is not yet in sight. This advance has been possible because man's effective universe for purposes of living expanded by virtue of newer meth-

ods of transportation, agriculture, power and machinery. Will newer methods keep pace with the ever-growing human populations? or will the human race like lemmings destroy themselves after an explosive reproductive spurt?

Dr. W. H. Johnson of Stanford University discussed the problem of "Experimental Populations of Microscopic Organisms" (*American Naturalist* 71: 5–20). Dr. Thomas Park of the Johns Hopkins University discussed the problem of populations in insects (*American Naturalist* 71:21–33), and Dr. A. M. Banta of Brown University and the Department of Genetics of the Carnegie Institution discussed "Population Density as Related to Sex and to Evolution in Cladocera." Professor Banta finds that "density of population not only controls sex ratios in Cladocera, but that it also promotes the evolution of thelytokous (parthenogenetically reproducing females only) races; and that possibly the ultimate in evolution as concerns reproductive processes in certain lower animals is the *zero* sex ratio—a maleless race."

Sexual reproduction is effective in redistributing different hereditary factors, and this has been of great evolutionary value to animals living in rapidly changing environments. These sexually reproducing animals are subject to the swamping effects of cross-breeding that may discount the advantages gained. In some organisms, many of the advantages have been gained by parthenogenetic races and they have lost many disadvantages of sexual reproduction. Dr. Banta has even discovered that parthenogenetic races mutate occasionally and thus have the mechanism for meeting changing conditions. He holds that, from the evolutionary point of view, a parthenogenetic race may actually be more advanced than its bi-sexual sister races. (*American Naturalist* 71:34–49.)

SELECTION

Dr. H. D. Goodale, in charge of the Mount Hope Farm in Williamstown, Mass., in the title of his paper poses the question "Can Artificial Selection Produce Unlimited Change?" and in the text answers this question in the affirmative (*American Naturalist* 71:433–459.) Dr. Goodale reviews the work of Professor Fernandus Payne and his success in increasing the number of bristles on the scutellum of Drosophila and claims that it is clear that the necessary variation may, sometimes at least, arise in such close association with selection that it is hard to escape the conclusion that selection is an indispensable agent or accessory in producing the variation. This fact, he says, cannot be denied, even if it cannot be explained satisfactorily, either by mutations at definite loci or by genes concealed in the two individuals with which the experiment was begun.

Every evolutionist, says Dr. Goodale, is interested in obtaining a full understanding of the powers of selection, because if man is able not only to form new combinations of genes with resulting benefit to himself but, as Darwin and his earlier followers supposed, is able to develop valuable characteristics from minute beginnings, it may be possible to gain further insight into the way in which natural selection operates. "I believe," says Dr. Goodale, "that we have accepted too easily the view that selection is without power to facilitate the creation of new inheritance . . . Darwin's view that selection has power to advance the creation of new inheritance finds support in these experiments and may eventually regain its former standing as a factor in organic evolution." A number of thought provoking suggestions are given to the mechanism by which selection, while not creating new germinal substance, may favor its spontaneous occurrence. Selection is not creative but the new substances do not appear without its aid.

At a symposium on the subject of "Supra-specific Variation in Nature and in Classification" held during the meetings of the American Association for the Advancement of Science, Atlantic City, Dec. 30, 1936 under the auspices of the American Society of Naturalists in joint session with the American Society of Zoologists,

the Botanical Society of America, the Genetics Society of America, the American Phytopathological Society and the Ecological Society of America, Professor Alfred C. Kinsey of Indiana University struck the keynote of the conference with this opening paragraph in his paper:

"During the last three years biologists of every field have shown renewed interest in problems of organic evolution. This is clearly the result of recent developments in genetics, taxonomy, paleontology and some other sciences which are basic to an understanding of species. Not many decades ago a symposium on evolution seemed to call for declarations of scientific creeds, on the basis of which biologists were split into rival schools and independent sciences. To-day we are more interested in collating and correlating sound data from all the fields which have anything to contribute."

Dr. Kinsey's views are based primarily upon his own intensive study of the gall forming wasp of the family Cynipidae. He found, according to his report of 1936—"The Origin of Higher Categories in Cynips" (Indiana University *Publications,* Science Series 4:1–334, 1936)—two general groups of species, the "insular" and the "continental." The insular species of wasps are confined to small areas generally disconnected from one another. The continental species inhabit a large continuous area. While the average distribution area in continental species is much larger (about 300,000 square miles) than in insular species (about 4,600 square miles) and the population size of continental species is far greater than of insular species, nevertheless the degree of speciation within the geographically limited groups is greater in the insular group (225 species) than in the continental group (64 species). With respect to the variability within each group, among the continental 74 per cent are variable, 13 per cent are fairly constant, and another 13 per cent are highly variable. Among the insular species 82 per cent are very constant, 12 per cent fairly constant, four per cent variable, and two per cent extremely variable. The very constant and the extremely variable forms are found among the insular species.

Dr. Kinsey points out that genetics has shown that similarity between species does not necessarily indicate close relationship. In modern taxonomy there are many cases of closely related but dissimilar species which have hitherto been placed in apparently divergent groups. It is only when phylogenetic interpretations are based upon a variety of morphologic, physiologic and distributional data that true relationships in such instances become evident. His view of the genetic background for the classification of species is that mutations develop within the heart of a population and not prevented by some sort of isolation factor from interbreeding with the parental stock bringing about an extension of the individual variation within the species. If, on the other hand, the very same mutation, large or small, is isolated or selected from out of the parental stock, the new species which ensues is differentiated by the same characters which were the basis of the Mendelian race in the first instance. But if the specific differentiation involves major mutations which are continued through any series of species, it is ordinarily considered that two genera have evolved. Since the same characters are concerned in all these cases there is no need for believing that different mechanisms of heredity are at the base of the evolution of different categories.

"Evolution," says Professor Kinsey, "is never more than a process of change in single genes, rearrangements of gene complexes and aggregations of genes, and the modification of gene frequencies in the development of specific populations. There is, after all, no evolution apart from the modification of existent species or the differentiation of new species." (*American Naturalist* 71:206–222.)

ACQUIRED CHARACTERS

In his contribution to the study of evolution entitled "Temporary Heredity and the Mechanism of

Adaptation" Professor C. P. Martin of McGill University in Montreal comes to these conclusions:

Acquired adaptive characters are always only temporary, even in the lifetime of the individuals in which they have originated, unless they involve irreversible structural alterations, or unless the stimulus that produced them continues to act or has acted on many occasions and for some time.

Although the acquired character is only temporary, the individual by responding to the stimulus that produced the character has become attuned to that stimulus, and this attunement to the stimulus endures much longer than the actual character itself, so that if the same stimulus is repeated the reaction of the individual to the second application is brisker than its reaction to the first.

An attunement to a stimulus can be inherited in some degree and temporarily. Acquired adaptive characters, therefore, arise earlier and more easily in successive generations if the same stimulus continues to be applied. Acquired characters are rarely, if ever, directly inherited.

It is suggested as a theory that possibly characters which originally arose in response to an external stimulus in the environment, in successive generations, arise earlier and earlier in the life history, owing to the inherited and progressively increased attunement of the organism to that stimulus, and may finally be evoked by some internal stimulus that for many generations has coincided with the external causative one. The character would thus become permanently inherited. These conclusions were presented in the supplement to the *American Naturalist* 71:281–336, 1937.

MATHEMATICAL APPROACH TO THE PROBLEM OF ORGANIC EVOLUTION AND GENETICS

Some of the greatest and most significant advances in the modern attack upon evolutionary problems have come from the more mathematically minded biologists. It is, therefore, valuable to review briefly the contribution of the English biologist, Dr. J. B. S. Haldane of the John Innes Horticultural Institution entitled "The Effect of Variation on Fitness" which appeared in the *American Naturalist* (71:337–349).

Dr. Haldane opens his statement by saying that there is good reason to believe, with Darwin, that natural selection has played a very important part in evolution. The great interest of the evolutionary process has tended to divert attention from the action of natural selection in stabilizing species in their existing monomorphic or polymorphic facies.

It is observed that in populations in equilibrium, every species has been found to include members less fit than the average and whose lack of fitness is heritable. Their number in a sufficiently large population is approximately constant, and in spite of selection does not diminish, either because the genes or chromosomal abnormalities responsible for them are continually being replenished as the result of mutation or because they are advantageous in a different combination.

In equilibrium, abnormal genes are wiped out by natural selection at exactly the same rate as they are produced by mutation. It does not matter whether the gene is lethal or almost harmless. In the first case, every individual carrying it, or if it is recessive, every individual homozygous for it, is wiped out. In the second case the viability of fertility of such individuals may only be reduced by one-thousandth. In either case, the loss of fitness to the species depends entirely on the mutation rate and not at all on the effect of the gene upon the fitness of the individual carrying it, provided this is large enough to keep the gene rare. Dr. Haldane supports these points by treating the problem mathematically from examples in genetics.

Dr. Haldane's conclusions follow: In a species in equilibrium, variation is mainly due to two causes. Some deleterious genes are being weeded out by selection at the same rate as they are produced by mutation. Others are preserved because the heterozygous form is fitter than

either homozygote. In the former case the loss of fitness in the species is roughly equal to the sum of all mutation rates and is probably of the order of five per cent. He suggests that this loss of fitness is the price paid by a species for its capacity for further evolution.

ENTOMOLOGY

By E. Porter Felt

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GENERAL

The geographical center of entomologists of continental United States has been located recently in Cumberland County, Illinois, about 60 miles southwest of Terre Haute, Indiana. The westward movement of this center has been strongly influenced by the large and well equipped entomological departments of Ohio State University, University of Illinois and Iowa State College.

The one-hundred and fiftieth anniversary of Thomas Say, American Naturalist widely known as the father of American entomology was observed by the Academy of Natural Sciences, Philadelphia, July 27. "The Vermin Killer: 1775 Model" appearing in the *Journal of the New York Entomological Society* contains quaint extracts from an early, almost unknown book on insects. Entomologists with philatelic leanings should read about "Insect Stamps" in the July *Entomological News*. Balloons as indicators of insect drift and of Dutch elm disease spread was an unusual contribution of the past season.

MEETINGS

Some 200 different papers dealing with numerous insect problems were on various programs at the annual scientific meetings held the beginning of the year at Atlantic City. Ninety-four, or nearly half, were economic and appeared on the program of the American Association of Economic Entomologists. Agricultural and horticultural pests and methods of controlling them were the main subjects discussed, though shade tree and forest insects were given fair attention. One of the most interesting phases was the symposium held jointly with the Entomological Society of America on insects affecting man, a relatively new field of applied entomology, dealing in this case largely with mosquitoes, man-infesting maggots and ticks, and their control. Dr. L. O. Howard, late chief of the Federal Bureau of Entomology and an outstanding leader in this phase of science, presided. Approximately one-fourth of the entomological papers read at these meetings were presented before the Entomological Society of America, which later organized a symposium on experimental populations devoted to a study of various problems in relation to insect increase.

Other gatherings of the year were the meetings of the Eastern Branch of Economic Entomologists at Philadelphia, the Cotton States Branch at San Antonio, Tex., the Pacific Slope Branch at Denver, Col. and the Rocky Mountain Conference on Entomology at Centennial, Wyo. in August. grasshoppers being the major subject for discussion. There was even a regional grasshopper and Mormon cricket conference in August at Sioux Falls, S.D. There was a meeting of all Florida Entomologists at Gainesville in March sponsored by the Newell Entomological Society. A prominent feature was a banquet celebrating the birthday of the veteran Herbert Osborn. Dr. Howard's eightieth birthday was celebrated in May at a dinner given by Washington entomologists. The Seventh International Congress for Entomology is scheduled for August 15–20 at Berlin, Germany.

RESEARCH AND PUBLICATIONS

There is unceasing activity among entomologists in describing and classifying insects, the more extended studies culminating in monographic pub-

lications such as a recently issued bulletin on *Nearctic Collembola or Springtails* by the late J. W. Folsom or the partly published *Aquatic Diptera* by Professor O. A. Johannsen, the remaining numbers of this series to be issued shortly. Entomological serials are giving more space than in earlier years to papers on spiders and mites, both groups being distinct from, though closely related to, insects and with somewhat definite interrelations.

The extent and varied character of publications on insects is indicated by an estimate made by leading bibliographical experts in Europe to the effect that over 100,000 separate entomological items were printed between 1913 and 1934 or an average of more than 4,500 each year. With this in mind, W. V. Balduf urges in the June 4 issue of *Science* the desirability of occasional summaries of the much scattered and frequently voluminous literature on many groups which are ordinarily neglected because of their relatively small economic importance. It is the feeling of the writer that specialization is carried to an excess in many cases and yet close limitations are almost essential for the research worker. There should be a little better adjustment or balance between the two. Americans make substantial contributions to this literature and *Index V of American Economic Entomology,* a 600-page volume now in press, is a practical recognition of the difficulty of keeping track of all these publications.

Numerous investigations of life histories of the biological or ecological phases of insect life are in progress, many of these elucidating vital facts in the life history of injurious species. An experimental analysis of insect development by A. Glenn Richards and Albert Miller appearing in the *Journal of the New York Entomological Society* is of fundamental importance. The physiology of insects has received much attention especially in relation to the tolerance to or toxicity of various chemicals, particularly those which may possibly be substituted for arsenical compounds. The effect of large scale insect control work upon wild life conservation is receiving much attention.

TEXTS AND MONOGRAPHS

The Entomological Department of the New York State Agricultural Experiment Station, Geneva is issuing a series of leaflets entitled *Common Insect Pests of New York,* remarkable because of the excellent colored illustrations giving the reader at once an idea of the insect. Each is limited to four pages of simple, non-technical text.

GENERAL WORKS AND JUVENILE TEXTS

How to Know the Insects by H. E. Jaques, Professor of Biology, Iowa Wesleyan College, planigraphed by John S. Swift Company, Mt. Pleasant, Ia., is primarily a college text for the identification of insects.

The Plant Doctor, the How, Why and When of Disease by Cynthia Wescott, Stokes Company, is a popular, practical discussion including much about insects.

Culture Methods for Invertebrate Animals by Paul S. Galtsoff, Frank E. Lutz, Paul S. Welsh and James G. Needham, Comstock Publishing Co., Ithaca, N.Y., has over 250 pages devoted to insects.

Animal Communities in Temperate America, Second Edition, Geographical Society of Chicago, Bulletin 5, was originally published 25 years earlier. The errors of the first edition have been corrected and an annotated bibliographic appendix added. These last two volumes, while broad in scope, contain much in relation to insects.

Grassroot Jungles by Edwin May Teale (Dodd, Mead) is unique in that it attempts to interpret the insect world from the viewpoint of these relatively tiny forms.

Termite City by Alfred E. Emerson and Eleanor Fish (Rand McNally) is ranked as an entrancing children's book, with much of interest for adults.

HISTORICAL AND LEGENDARY

Fragments of Entomological History, Including Some Personal Recol-

lections of Men and Events by Herbert Osborn, is a well written volume abounding in personal incidents relating to many of the older or more active entomologists.

A History of Insect Classification by H. F. Wilson and M. F. Donner, photolithographed, is published by John S. Swift and Co., St. Louis, Mo.

The Sacred Bee in Ancient Times and Folklore by Hilda M. Ransome, is published by Houghton, Mifflin Co.

TECHNICAL WORKS

Atlas of the Scale Insects of North America by G. F. Ferris (Stanford University Press) is a series of lithoprints and charts now in course of publication, those already issued numbering 136. This is only a part of a long series planned to include all the scale insects occurring in the United States.

Nearctic Collembola or Springtails of the Family of Isotomidae by J. W. Folsom, is published as Bulletin 168 of the United States National Museum.

A Glossary of Entomology by J. R. De la Torre-Bueno, published by the Brooklyn Entomological Society, is a greatly extended revision of the well known *Smith Glossary*.

Manual of Entomological Equipment and Methods, Part Two, by Alvah Peterson, is a planograph, with numerous illustrations (John S. Swift and Co., St. Louis).

PERSONNEL

Professor C. L. Metcalf, head of the Department of Entomology, was appointed chairman of the Biological Sciences in the University of Illinois. Dr. R. W. Leiby was made Assistant Professor of Entomology in Extension at Cornell University to fill the vacancy caused by the death of Professor Crosby. Dr. P. N. Annand was appointed Special Research Assistant to the Chief of the Federal Bureau of Entomology and Plant Quarantine. Erle G. Brewer succeeded L. H. Worthley, recently deceased, as leader of the Federal Japanese Control and Dutch Elm Disease Eradication work. Edith M. Patch, founder of the University of Maine Department of Entomology, retired in June. She is a well known authority on aphids and an interesting and most successful nature writer, especially for the young. She is the only woman who has served as president of the Entomological Society of America. Professor P. J. Parrott, was appointed Director of the New York Agricultural Experiment Station at Geneva to succeed U. P. Hedrick, resigned, in January, 1938.

NECROLOGY

Cyrus R. Crosby, for many years Associate Professor of Extension Entomology at Cornell University and an authority on spiders, died Jan. 11.

Lawrence Bruner, for years Professor of Entomology at the University of Nebraska and widely known because of his studies of the Orthoptera or grasshoppers in Argentina, died Jan. 30.

William M. Wheeler, Professor of Entomology at Harvard University and Associate Curator of Insects in the Museum of Comparative Zoology, a widely read and generally recognized leader in entomology, died June 4.

Vernon L. Kellogg, well known in earlier years as Professor of Entomology and Lecturer in Bionomics in Stanford University, later serving as Permanent Secretary of the National Research Council, 1920–1932, died Aug. 8.

Professor P. W. Claassen, Professor of Biology at Cornell University, who in earlier years collected parasites for the government in China and Japan, died Aug. 16.

Edson F. Hitchings, State Entomologist of Maine from 1905 to 1911, died Sept. 8.

L. H. Worthley, In Charge, Dutch Elm Disease Eradication and Japanese Beetle Control, United States Department of Agriculture, widely known because of his earlier quarantine and control work on the gypsy moth and the European corn borer, died Oct. 9.

BOTANY

By Mildred E. Mathias

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PLANT PHYSIOLOGY

Growth Substances.—The study of various growth-promoting substances, plant hormones and vitamins has advanced to a prominent place in the field of physiologic studies. A general account of the progress in this subject has been published by Went and Thimann in their monograph on *Phytohormones.* Various papers have considered the effect of 3-indole acetic acid on cell wall of stem and root; the relation of hydrogen ion concentration to the penetration of 3-indole acetic acid into Nitella cells; effect of indole acetic acid on growth and chemical composition of etiolated bean plants; responses of bean and tomato to *Phytomonas tumefaciens* and its extracts and to beta-indoleacetic acid and wounding; histological and microchemical studies of the reactions of tomato plants to indoleacetic acid; growth responses of various plants to indole 3-n-propionic acid; effect of ultraviolet radiation on indole-3-n-propionic acid; the titration curves of 3-indole acetic, 3-indole propionic, and 3-indole butyric acids; the influence of indole acetic, indole butyric and naphthalene acetic acids on roots of *Lupinus albus* seedlings; the growth of roots in deuterium oxide; separation from yeast of materials essential for growth of excised tomato roots; and thiazole and the growth of excised tomato roots.

La Rue has published a paper on the part played by auxin in the formation of internal intumescences in the tunnels of leaf miners and concludes that auxin must play an important part in the growth of galls; he is beginning an investigation of the hormone relations of plant galls. Other papers on auxin concern the influence of auxin on secondary branching in *Aster,* on leaf development in *Solidago,* and on *Chorella vulgaris;* the effect of the roots on the production of auxin by the coleoptile of *Avena* seedlings; the polar transport of auxin and electrical polarity in the coleoptile of *Avena;* and the nature of inhibitions caused by auxin. Leonian and Lilly have found in certain experiments that heteroauxin inhibited growth. Greenfield has discussed the response of stock seedlings to heteroauxin applied to the soil. Bonner has found that Vitamin B_1 is not only an animal vitamin and a growth substance for fungi and bacteria but also a growth substance for higher plants. Vitamin B_1 and its relation to nutrition and growth of excised tomato roots have been studied. Robbins and co-workers have discussed pyrimidine and the azole intermediates as substances for vitamin B_1.

Other papers in this field concern the comparative effectiveness of acids, esters, and salts as growth substances; *Avena* coleoptile curvature in relation to different concentrations of certain synthetic substances; the growth of wheat seedlings in solutions containing chemical growth substances; the production and distribution of growth hormone in shoots of *Aesculus* and *Malus,* and its probable role in stimulating cambial activity; nutrient deficiencies and growth hormone concentration in *Helianthus* and *Nicotiana;* the preparation of plant growth-promoting substances; the responses of plants to hormone-like substances with special reference to propagation; the effect of extracts from the corn plant on growth of excised root tips; the histological reactions of bean plants to growth promoting substances; and the inactivation of plant growth substance by light.

Photosynthesis.—Publications concerning photosynthesis include a general article by Emerson; papers on the evolution of photosynthesis; effect of light intensity on the photosynthetic efficiency of tomato plants; the continuous measurement of photosynthesis, respiration, and transpiration of plants growing under field conditions;

photosynthesis and the absorption spectra of plant pigments; the relation of sulfur dioxide in the atmosphere to photosynthesis and respiration; the time course of photosynthesis for a higher plant; the relationship between the internal structure and photosynthetic behavior of apple leaves; and the influence of light and carbon dioxide on photosynthesis.

Light and Radiation.—Publications on x-radiation discuss its effect on tuberization of the Colorado wild potato, on *Zea Mays,* and on the chromosomes in mitosis; the structural changes produced in leaf tissue by irradiation of the dry seeds; and the effect of the length of x-ray waves on seeds. The results of an experimental study of the problem of mitogenetic radiation have been published. The effect of light on growth, structure, and germination has been discussed.

Virus Diseases.—The outstanding contribution in the study of virus diseases has been made by workers at the Rockefeller Institute, namely, Stanley, Wyckoff, Lavin, and Loring. They have succeeded in isolating the various virus proteins by ultracentrifugation. They find the viruses are high molecular weight crystalline proteins. Other papers on virus diseases concern the insect transmission of virus diseases in plants; the influence of host nutrition on systemic development of tobacco mosaic; quantitative studies of tobacco-mosaic virus inactivation by ultra-violet light; and serological studies of plant viruses.

Other Problems.—Other fields of investigation concern various problems of seed germination, transpiration, absorption, the chemical structure of chlorophyll, nutrition, dormancy, metabolism, growth, and the effects of hydrogen ion concentration. Several papers discuss selenium distribution in soils and vegetation. A series of general papers refer to mineral nutrition, the alkaloids, plant pigments, permeability, and organic acids of plants. A monograph on growth, based on studies on wheat grown under constant conditions, has been published by the Food Research Institute, Stanford University. Of general interest is a series of papers by Chester on a critique of plant serology, discussing the nature and utilization of phytoserological procedures, the application of serology to the classification of plants, and the identification of plant products, and phytoserology in medicine and general biology. Loomis and Shull have published a new text on *Methods in Plant Physiology.*

TAXONOMY

Plant Collections.—Plant collections have been continued in various parts of the world, some of them being individual endeavors and others sponsored by institutions. Among them may be mentioned Williams' collections in the Isthmus of Tehuantepec, Camp's collection in Oaxaca, Woodson's work in Panama, and Pennell's collections from the northwestern United States. The Department of Agriculture is still maintaining several field expeditions. Numerous small and large collections, greatly adding to our knowledge and facilitating studies, have been made by various botanists throughout the country.

Higher Plants.—Monographic and revisional studies have been continued on various genera and families. They include publications on the genera *Aegiphila, Arabis, Bidens, Brahea, Cardamine, Carex, Chanekia, Cleyera, Downingia, Eleocharis, Eriophyllum, Erythea, Eupatorium, Grindelia, Heuchera, Mertensia, Mesosetum, Oenothera, Penstemon, Phacelia, Rhus, Sedum, Silphium, Tiarella,* and *Tracyina.* Family studies concern the Anacardiaceae, Apocynaceae, Asteraceae, Boraginaceae, Bromeliaceae, Dioscoreaceae, Eriocaulaceae, Lemnaceae, Orchidaceae, Poaceae, and Vacciniaceae. Artz has published a paper on the plants of the shale banks of the Massanutten Mountains of Virginia. Fernald has presented an account of a summer's collecting in the inner coastal plain of southeastern Virginia with an enumeration and discussion of the noteworthy species collected. Numerous new species have been described

and various notes have been published, all adding to our knowledge of flowering plants.

Lower Plants.—Publication on the algae include a preliminary report by Setchell and Gardner and their contributions on the genus *Iridophycus.* Lillick has published a note on the fresh-water algae from Texas. Steere has presented a series of papers on bryophytes, among them the "Critical Bryophytes from the Keweenaw Peninsula, Michigan," and with Nichols "Bryophytes of the Porcupine Mountains, Ontonagon County, Michigan." Other publications on this group include those on the bryophytes of Utah, notes on mosses from the Uinta Basin, Utah, and Nichol's paper on *Polytrichum* and *Pogonatum* species of the eastern United States. Weatherby has published a list of the varieties and forms of ferns of eastern North America. There have also been published lists of the ferns of Hardin County, Kentucky, and of the ferns and fern allies of the Keweenaw Peninsula, Michigan.

Floras and Manuals.—Publications in this field include a continuation of the *Flora of Peru* published by the Field Museum of Natural History, *Contributions toward a Flora of Panama* published by the Missouri Botanical Garden, *Additions to the Revised Catalog of Ohio Vascular Plants* by Schaffner, a winter key to the trees of eastern Tennessee, a check-list of the plants of Grand Canyon National Park, Winter's *Flowering Plants of Nebraska,* bulletins on Ohio trees and on North Dakota weeds, Rickett's *Wild Flowers of Missouri,* a guide for beginners, Stemen and Myers, *Oklahoma Flora,* and the first volume (conifers) of a publication on Virginia trees. Of general interest are a preliminary bibliography of West Virginia biology and Merrill's Polynesian botanical bibliography, 1773–1935.

MORPHOLOGY AND ANATOMY

The anatomy and morphology of the flower and fruit of the loquat, the polygonaceous flower, and of certain Boraginaceae have been reported. A study has been made of the pistil anatomy of cotton. Of particular interest is Hunt's study of the style and stigma, with reference to the nature of the carpel.

Pierce has discussed the systematic anatomy of the woods of the Cupressaceae. Other papers concern leaf arrangements in *Ailanthus,* formation of periderm in aspen, root systems and volumes of giant sequoias, gametophytes and embryogeny of *Cupressus arizonica,* structure and behavior of the marginal meristem of the bud scales of *Rhododendron,* origin and development of foliage leaves and stipules of *Morus alba,* and method of branching in *Ailanthus.* Kribs has discussed the evolutionary sequence of wood parenchyma types in dicots.

Other morphological and anatomical publications concern the secondary vascular system of Amarantaceae and Chenopodiaceae; the transition region in *Capsicum frutescens;* the epicotyl in maize seedlings; leaf structure of the tomato; secondary growth in monocots; seedlings of *Cynara scolymus;* bud and leaf development of *Viburnum rufidulum;* spiral vessels in *Ricinus communis;* development of the male gametophyte in certain monocots; embryo-sac development in *Yucca rupicola;* the gametophyte of *Equisetum scirpoides;* vegetative reproduction of the fern sporophyte, *Cyathodium barodae, Nitella hyalina, Podostemon ceratophyllum, Vallisneria spiralis, Calla palustris,* and certain species of *Psaronius.* Bausor has studied fasciation and its relation to problems of growth. Sinnott's address on morphology as a dynamic science has been published.

MYCOLOGY AND PHYTOPATHOLOGY

Taxonomic studies of the fungi include papers on the genera *Mycena* and *Glonium,* notes on agarics, resupinate polypores from the region of the Great Lakes, descriptions of Discomycetes from Panama and Colombia, various cup fungi, and tropical rusts. Maneval has published a list of Missouri fungi with special reference to plant pathogens and wood-destroying species; and Hesler has

published a preliminary list of the fungi of the Great Smoky Mountains National Park.

Papers on morphology concern the nuclear history of *Sclerospora graminicola;* the structure and development of *Phymatotrichum silvicolum;* the structure, development, identity and relationship of *Endochytrium;* studies in the sexuality of the Heterobasidiae; observations on the comparative morphology and taxonomic relationships of certain grass smuts; and the structure and activities of myxomycete plasmodia. Other publications of interest concern Crozier formation in the Gymnoascaceae; the fruiting of *Physarum polycephalum* in relation to nutrition; the proteolytic enzymes of some common molds; a nutritional study of *Achlya bisexualis* and *Saprolegnia ferax;* hydrogen ion concentration and ascus formation; the relation between mycorrhizae and the growth and nutrient absorption of coniferous seedlings in nursery beds; and the relation of oxygen pressure and temperature to growth and carbon dioxide production in *Polystictus versicolor.*

Numerous publications concern plant diseases—*Phymatotrichum omnivorum* infection of cotton seedlings, oat smuts, kernel smuts of sorghum, spruce rust, *Gymnosporangium* rusts, the *Cephalosporium* disease of elms, *Fusarium lycopersici,* barley smuts, and *Fusarium* yellows disease of celery. Of general interest are Coon's paper on "Progress in Plant Pathology: Control of Disease by Resistant Varieties," and a discussion by Stevens and Wood on "Recent Fluctuations in Plant Diseases in the United States."

GENETICS AND CYTOLOGY

Papers of general interest include those by Anderson on "Cytology in its Relation to Taxonomy" and "Supra-specific Variation in Nature and in Classification: from the Viewpoint of Botany"; Sinnott on "The relation of Gene to Character in Quantitative Inheritance" and "The genetic Control of Developmental Relationships"; Castle, "Membrane Tension and Orientation of Structure in the Plant Cell World"; Zirkle, "The Plant Vacuole"; Sax and Sax, "Stomata Size and Distribution in Diploid and Polyploid Plants"; Jones, "Somatic Segregation in Relation to Atypical Growth"; Sears, "Cytological Phenomena Connected with Self-sterility in the Flowering Plants"; Berg, "The Relative Roles of Stabilization and Redifferentiation of the Gene in the Evolution of the Hereditary Substance"; Griggs, "Hybridity as a Factor in Evolution"; and Ashby, "The Physiology of Heterosis." Seifriz has presented the report of the physical methods committee with a brief discussion of approved methods and apparatus used in determining physical properties of protoplasm and cell structure. Darlington has published a second edition of *Recent Advances in Cytology.*

Genetical and cytological studies have been continued on *Tradescantia, Neurospora, Nicotiana, Datura* and *Oenothera.* Other genera studied include *Gaillardia, Ipomaea, Malus, Solidago, Trautvetteria, Trillium, Tulipa* and *Vaucheria.* Studies have also been made of the Hepaticae, Cactaceae, various grasses, the Convolvulaceae, Resedaceae, and certain algae.

ECOLOGY AND PLANT GEOGRAPHY

Studies of restricted areas from an ecological or geographical viewpoint include those on the vegetation of the Porcupine Mountains of northern Michigan; the pinelands of southeastern Louisiana; a colony of coastal plain plants on the Cumberland Plateau in Laurel County, Kentucky; Cantillas Canyon of Lower California; recent changes of climate and vegetation in southern New England and adjacent New York; the aquatic plants of Sweeney Lake, Oneida County, Wisconsin; some relationships of the flora of the Cumberland Plateau and Cumberland Mountains in Kentucky; the lower Rio Grande Valley; the southern Appalachian grass balds; aquatic plant communities of Reelfoot Lake, Tennessee; a depressed outlier of the Cumberland Plateau in Alabama; the vegetation of the cape

region of Baja California; *Fagus-Acer* and *Quercus-Carya* communities in Brown and Bartholomew counties, Indiana; mixed prairie in west central Kansas; a comparative study of bogs on Cary and Tazewell drift in Illinois; association types in the north coast ranges of California; the vegetation of a barefaced cliff in western North Carolina; and raised bogs of southeastern Alaska.

Investigations have been made on the root system of weed and crop plants under field conditions; the ecology of roots; tuber production of Colorado wild potato as influenced by certain environmental factors; the ecology of the burroweed; relationship of southern cedar growth to precipitation and run off; secondary growth of white pine in relation to its water supply; and the flora and fauna of brackish water. Griggs' address on "Timberlines as Indicators of Climatic Trends" has been published.

MISCELLANEOUS PUBLICATIONS

Paleobotanical papers include a preliminary report of the anatomy and affinities of a new species of *Medullosa*, structure of the paleozoic seeds of the Trigonocarpales, Codonotheca and Crossotheca: polleniferous structures of pteridosperms, and American cretaceous ferns of the genus *Tempskya*. Studies have been published on the fossil floras of the western United States, the flora of the New Albany shale, fossil plants from the Stanley shale and Jackfork sandstone in southeastern Oklahoma and western Arkansas, Cambrian calcareous algae from Pennsylvania, and the fossil flora of the Wedington sandstone member of the Fayetteville shale. Berry has presented a general account of the tertiary floras of eastern North America.

The teacher of botany will be interested in Robbins and Ramaley, *Plants Useful to Man;* Hill, *Economic Botany;* Stanford, *General and Economic Botany;* Muenscher and Petry, *Keys to Spring Plants;* Chase, *First Book of Grasses, the Structure of Grasses Explained for Beginners;* Sinnott, a third edition of *Botany-Principles and Problems;* and Harlow and Harrar, *Textbook of Dendrology Covering the Important Forest Trees of the United States and Canada.*

Of general interest are Stakman's article on "The Promise of Modern Botany for Man's Welfare through Plant Protection," Gager, "Botanic Gardens of the World, Materials for a History," and Pillsbury, "Picturing Miracles of Plant and Animal Life."

Publications in the field of horticulture include the fourth edition of Hottes, *The Book of Annuals;* Sudell, *The New Illustrated Gardening Encyclopedia;* Dorrance *Fragrance in the Garden;* Bailey, *The Garden of Gourds;* and Preece, *North American Rock Plants.*

BOTANICAL SOCIETIES

The annual meeting of the American Association for the Advancement of Science, including the Botanical section and its affiliated societies, was held in Atlantic City during the Christmas holidays, 1936. At that time a new section for paleobotany was organized. The summer meeting, 1937, of the Association was held at Denver in conjunction with the Pacific and Southwestern Divisions. The Botanical Society of America with the American Society of Plant Taxonomists held two summer meetings, one at Acadia University, Wolfville, N.S., and the other at the Biological Station of the University of Michigan, Douglas Lake, Michigan. Of more restricted interest were the meetings of the numerous local botanical societies and academies of science.

ECONOMIC BOTANY

By H. K. Hayes

Professor, University of Minnesota

FOURTH INTERNATIONAL GRASSLAND CONGRESS

Printed summaries of contributions were available at the congress held at Aberystwyth, Wales, July, 1937. Among the papers of interest, Johnstone-Wallace emphasized the importance of wild white clover (*Trifolium repens*) in eastern United States. When grown in combination with Kentucky bluegrass, yields were much greater than from bluegrass grown alone. This was due to the high protein content of wild white clover and to the increase in protein content of bluegrass grown in association with white clover over that when bluegrass was grown alone.

Williams, at Aberystwyth, presented an interesting paper on the genetics and breeding of red clover (*Trifolium pratense*). A study of self-sterility showed 34 different self-sterility allelomorphs. Self-fertility is stated to be an undesirable character as self-fertilization led to a rapid decrease in vigor.

Valle from Finland emphasized the importance of studies of the effects of self-fertilization with grassland plants and the development of systems of breeding for this important group of crop plants. He emphasized, also, the value for grasslands of those species which grow wild in the country itself. Sylven from Sweden emphasized, also, the value of selecting the ecotypes growing wild in the locality, that have been stabilized through natural selection and are adapted for local conditions.

Cardon of the United States Department of Agriculture gave a comprehensive summary of plans, objectives and procedures for pasture improvement in the United States. Results of actual achievement were not attempted because this phase of research has been initiated only in recent years. Jenkin from Aberystwyth summarized the methods of strain building that have been developed at the Welsh Plant Breeding Station.

NATIVE GRASS SEED IN THE GREAT PLAINS

Crider and Hoover have made an interesting summary (*Herbage Publication Series Bull. No. 24, 1937*, Aberystwyth of methods of collection of native grass seed in the Great Plains. They describe and picture the following species: Western wheatgrass (*Agropyron smithii*) is found in almost pure stands on heavy soils from Arizona to Montana. It can be harvested satisfactorily with the small grain combine equipment. Over 400,000 pounds of seed were harvested by this method in 1936 with yields of 100–250 pounds of seed per acre. The grass is valuable for grazing and cured forage, being one of the major native species now in use in checking soil erosion.

Little bluestem (*Andropogon scoparius*) and big bluestem (*Andropogon furcatus*) are adapted to the eastern portion of the Great Plains, little bluestem being the dominant species in the mixed prairie vegetation of this region. These two species are being used extensively by the Soil Conservation Service in the re-vegetation of abandoned farm lands in this area. They can be harvested successfully with the power stripper equipment described in the article.

Buffalo grass (*Buchloe dactyloides*) is adapted to the climatic and soil conditions in the western portion of the great plains. Seed is borne in burs attached to short culms which makes harvesting with machinery very difficult. The plants are dioecious. Blue grama (*Bonteloua gracilis*) is the dominant species throughout the western Great Plains. It is extremely drought resistant and is being used extensively in the re-vegetation program in the Dust Bowl area.

VARIATION IN GRASSES

The grassland conference is one indication of a widespread interest in pasture improvement and grassland

management. The organization of a regional laboratory for the study of grasses by the Department of Agriculture which is located at State College, Pennsylvania, is another indication of a growing interest in the improvement and utilization of grasses in its relation to problems of land utilization.

A report by Gernert (*Jour. Amer. Soc. Agron.* 29: 242–46, 1937) of studies with buffalo grass emphasized the possibilities of improvement of grasses by selection of variations found in nature.

The typical "short grass" of the western prairies is buffalo grass (*Buchloe dactyloides*). It is dimorphic in structure. Seedlings are monoecious, developing both staminate and pistillate branches which multiply their own kind vegetatively and to a considerable area. The short female plants bear their seed so close to the soil that harvesting seed with ordinary farm tools is impractical. Seed has been gathered by hand picking and by the use of vacuum suction. Vegetative propagation so far appears most satisfactory.

Rank growing female plants with elevated spikelets capable of harvest with a farm mowing machine were found on Arbuckle Mountain in Oklahoma. Studies of the new type when vegetatively propagated showed it to be outstanding in yielding ability.

IMPROVEMENT OF FARM AND HORTICULTURAL CROPS

The United States Department of Agriculture *Yearbook* for 1936 and 1937 presents in an easily available form a wealth of material, for the casual reader and more intensive student, regarding the improvement of economic plants and the genetical principles upon which such improvement is based. An interesting statement in the 1937 volume by Secretary Henry A. Wallace is quoted here in part:

"If genetics enables us to outdo nature's own efforts it is in the truest sense a science of co-operation with nature. We want to do different things than nature does—for example, in the creation of wheat x grass hybrids with plump seeds—but we have to learn nature's methods of doing them. I think that more knowledge of how to co-operate with nature for our own good is the greatest need of the world today."

Yearbook articles on numerous economic plants are briefly summarized and presented also in greater detail for the specialist and advanced student. The articles include a discussion of previous achievements, the work under way and future problems with the following: vegetable crops, tomatoes, peppers, egg-plant, cucurbits, onions, peas and beans, cabbage and its leafy relatives, root vegetables, salad plants, sweet corn and pop corn, potatoes, strawberries, blackberries and raspberries, currants and gooseberries, unusual bush fruits, blueberries, apples, pears, grapes, stone fruits, citrus fruits, nuts, flowers, forage and cover crops, miscellaneous grasses, timothy, alfalfa, soybeans, hops and forest trees.

The completeness of many of these summaries can be appreciated by the statement that the 1937 *Yearbook* separate article on forest trees includes over 300 references relating to forest tree breeding.

DISEASE RESISTANCE

Weimer and Madson (*Jour. of Agr. Res.* 52: 547–555, 1936) discuss the development of alfalfa varieties for California that are resistant to bacterial wilt. Previous papers have shown that Ladak and some Turkestan alfalfa are resistant to bacterial wilt (*Phytomonas insidious*). These alfalfas are not suitable for growing under California conditions because they do not give satisfactory growth late in the fall and early in the spring, a characteristic of winter hardy types not needed under California conditions. Six years of study with progenies of less winter-hardy types are reported. Several progenies from non-winter hardy types seemed as resistant as Ladak and give reason for the belief that wilt resistant types of the non-hardy group can be obtained.

Welsh (*Canadian Journal of Res.* 15:58–69, 1937) describes the synthetic production of oat varieties resistant to race 6 and certain other physio-

logical races of oat stem rust. Oat varieties that are classed as resistant to stem rust, *Puccinia avenae,* are resistant only to a certain number of the 10 physiological races of the rust. Strains resistant to race No. 6 were produced from a cross between Hajira Strain and Joanette Strain, both parents being susceptible to this race.

The breeding of powdery mildew resistant cantaloupe No. 45 from a cross between a low quality resistant variety from India with Hale's Best is described by Jagger and Scott (*U.S. Dept. of Agr. Circular No. 441,* 1937). Nearly half of the cantaloupe acreage in the Imperial Valley was planted with this variety in 1936. It excels in quality, market type, resistance to mildew and in productivity.

Studies of resistance to bacterial wilt, *Phythomonas stewarti,* of inbred strains and crosses of sweet corn by Ivanoff and Riker (*Jour. Agr. Res.* 53: 927–954, 1936), showed that resistance was correlated frequently with either height, lateness of maturity or both, although a few tall, late strains were observed that were susceptible, while a few early strains with a high degree of resistance were obtained. Such early, resistant strains give opportunity for the development of early maturing, resistant lines of sweet corn for the canner and market gardener.

Parker (*Jour Agr. Res.* 52: 895–916, 1936) found that reciprocal crosses gave very different results in their reaction to the common mosaic virus in the bean, showing that the maternal parent determines to a large degree the reaction of the hybrids. This leads to the assumption that the cytoplasm governs the immediate reaction of the plant to the virus. In the F_2 and F_3 hybrid generations there is closer agreement in reciprocal crosses than in F_1, indicating that the ultimate control is nuclear.

In a previous study by Hart a type of resistance to stem rust, *Puccinia graminis tritici,* called "functional resistance," consists of delayed morning opening of the stomata of certain varieties of wheat, preventing the entrance of the rust until the moisture on the plant has evaporated. The writers, Caldwell and Stone (*Jour. Agr. Res.* 52: 917–32, 1936) found no evidence of a similar kind of resistance against leaf rust, *Puccinia triticina.* With leaf rust the "appressorium originating from the urediospore appears to function as a specialized organ to apply pressure between the closed guard cells," thus making possible the entry of the fungus.

BUD SPORTS LEAD TO IMPROVED STRAINS

Extensive studies of bud selection in Eureka and Lisbon lemons and progeny tests of bud variations are reported by Shamel, Pomeroy and Caryl (*U.S. Dept. Agr. Tech. Bul. 531,* 1936). Systematic individual tree performance studies were started in 1911. The second phase of study consisted of performance records of the progeny of carefully selected parent trees from the original performance record plot. The importance of these variations that occur as limbs on normal trees, or as entire trees that differ from the normal in one or more characteristics, is evident from a study of the data presented. Several strains are described that differ widely in their characters. Production records of these strains are given for a 12-year period. Wide differences in yield were obtained and these differences appear rather constant from year to year. Relatively constant desirable strains can be obtained through the use of buds from the stable and superior parent trees as shown by progeny trials.

A photograph and description of the parent Fuerte avocado tree now growing in the Le Blanc garden at Atlixco, Mexico is of interest. It is stated by Shamel (*Jour. of Heredity* 28: 180–183) that about 75 per cent of the commercial avocado crop in California is produced by clonal progenies from this tree, the first progenies being tested in California in 1911.

WEED CONTROL

The problem of eradicating bindweed in bluegrass lawns is of rather wide interest in those regions where bindweed is a serious pest. Kinch and

Keim (*Jour. Amer. Soc. Agron,* 29: 30–39, 1937) compare the results of two methods, pulling at regular intervals and spraying with sodium chlorate. When the bindweeds were pulled at weekly intervals, one season and a half and 28 pullings were necessary for complete eradication. At two-week intervals, two seasons and 20 pullings were necessary for eradication. Broadcasting sodium chlorate and immediately applying water, thus leaching the chlorate into the soil, killed the bindweed in a year's time without greatly injuring the bluegrass. A total of five pounds of sodium chlorate per square rod applied in one pound applications at two-week intervals gave the best results.

Competition between plants is believed to take place first between the root systems, and therefore the nature, vigor, distribution and extent of root systems of economic plants and of weeds are of great importance. Pavlychenko (*Can. Jour. of Res.* 15: 33–57, 1937) describes and illustrates the soil block method of studying the root systems of weeds and of economic plants. A photograph of the root system of a single wild oat plant, excavated 80 days after emergence, is of interest. The total length of roots was 54 miles. A method is described in detail called the Soil-block Washing Method which makes it possible to study root systems of plants grown under ordinary field conditions in various types of soil. By this method the root systems of individual plants of various species may be compared.

STUDIES IN PLANT PHYSIOLOGY

The heritable differences in the length of the rest period for seed of cereals growing under comparable field conditions was studied by Larson, Harvey and Larson (*Jour. Agr. Res.* 52: 811–836, 1936). The various varieties were harvested at three periods of maturity, soft dough stage, hard dough and ripe, and the percentage of germination determined after storage at several different constant temperatures. At the lower temperatures of storage, the rest period was generally longer. In general the rest period was longer for the immature than for the ripe seeds. The length of the rest period varied greatly with the variety. The writers suggest that this character deserves consideration by plant breeders in its relation to germination in the shock after harvest when conditions are unfavorable.

Much previous information has shown the practical importance of length of day as a factor in plant growth and development and particularly in sexual maturity. Typical short-day and long-day plants were grown under controlled conditions by Steinberg and Garner (*Jour. Agr. Res.* 52: 943–960, 1936) to determine the effect of day length and temperature in relation to the initiation of sexual reproduction. The soybean varieties—Mandarin, Peking and Biloxi—classed as of early, medium and late maturity in the region of Washington, may be regarded as short-day types while the sugar beet has been found to be a long-day type. The soybean varieties were grown under four mean temperatures, 71°, 77°, 83° and 89°F, while sugar beets were grown at mean temperatures of 60°, 65°, and 73°F. Various day lengths were used and the plants were grown under artificially controlled high-intensity illumination.

The soybean was found to have a relatively high temperature requirement. The lowest mean temperature used delayed flowering at all day lengths in each of the varieties. The critical light period with favorable temperatures was approximately a 17-hour day, a 15-hour day and between 13- and 14-hour days for the varieties Mandarin, Peking and Biloxi, respectively.

The strain of sugar beets used in the tests flowered in 39 days when exposed to continuous light and a mean temperature of 73°F. The writers say: "As the daily light period decreased, lower temperature became increasingly favorable to flowering. Apparently the beet commonly behaves as a biennial rather than an annual only because in most situations it is grown under combinations of day length and temperature that are more or less unfavorable to reproductive activity."

HYBRID VIGOR IN SORGHUM

All of the F_1 hybrids studied by Karper and Quinby (*Journal of Heredity* 28: 82–91, 1937) were more vigorous than either parent. In some crosses where milo or Hegari were one of the parents, extreme vigor was obtained accompanied by lateness of maturity, increased height, large stalks and leaves and high yield of grain and forage.

A large increase in yield of grain was obtained from a cross of Blackhull with Red Kafir without any marked change in period of maturity or height, indicating that these varieties carry the same genes for height and maturity but differ in genes for growth that are responsible for grain production. The writers discuss the possibilities of producing and utilizing hybrids in sorghum for commercial growing. Methods of producing crossed seed must be developed before such commercial use becomes possible.

NEW FILBERTS FOR EASTERN UNITED STATES

Artificial crosses between an eastern native hazel, *Corylus americana*, with some of the leading varieties of the European filbert, have been made by Reed (*Jour. Heredity* 27: 427–33, 1936) and about 4,000 hybrid trees have been studied during the last 18 years. Two new varieties have been obtained. It is believed that these hybrid varieties will be of considerable value in future nut growing in eastern United States.

THE HOUMA POTATO: A NEW VARIETY

This new variety was obtained from a series of crosses to combine resistance to mild mosaic with a high yield of smooth tubers of high cooking quality (*U. S. Dept. of Agr. Circular 420*, 1936). In a number of tests it has compared favorably in total yield with Katadin, Chippewa, Irish Cobbler and Green Mountain. It appears to be well adapted in Maine, North Carolina and particularly in Louisiana where its high yield and good cooking quality, ability to make a good crop when planted either in the spring or fall, deep setting of tubers which prevents sunburn, and keeping quality of tubers in storage from one spring to another combined with desirable plant characters, makes the new variety a distinct contribution. Seed stock is now being increased in Maine for distribution.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, Logan Square, Philadelphia, Pa.

AMERICAN ASSN. OF ECONOMIC ENTOMOLOGISTS, Amherst, Mass.

AMERICAN ASSN. OF MUSEUMS, Smithsonian Institution, Washington, D.C.

AMERICAN MICROSCOPICAL SOCIETY, Kansas State Agricultural College, Manhattan, Kan.

AMERICAN MUSEUM OF NATURAL HISTORY, 77th St. and Central Park W., New York City.

AMERICAN NATURE ASSN., 1214 Sixteenth St., Washington, D.C.

AMERICAN NATURE STUDY SOCIETY, 5540 Pershing Ave., St. Louis, Mo.

AMERICAN ORNITHOLOGISTS' UNION, 1939 Biltmore St., N.W., Washington, D.C.

AMERICAN PHYTOPATHOLOGICAL SOCIETY, Bureau of Plant Industry, Washington, D.C.

AMERICAN SOCIETY OF NATURALISTS, Brown University, Providence, R.I.

AMERICAN SOCIETY OF ZOOLOGISTS, 25 Wesleyan Place, Middletown, Conn.

BOSTON SOCIETY OF NATURAL HISTORY, 234 Berkeley St., Boston, Mass.

BOTANICAL SOCIETY OF AMERICA, Cornell University, Ithaca, N.Y.

ENTOMOLOGICAL SOCIETY OF AMERICA, (Clarence H. Kennedy, Editor), Columbus, O.

EUGENICS RESEARCH ASSOCIATION, Cold Spring Harbor, New York. Spring Harbor, New York.

FIELD MUSEUM OF NATURAL HISTORY, Roosevelt Road and Lake Michigan, Chicago, Ill.

MUSEUM OF THE COMPARATIVE ZOOLOGY, Cambridge, Mass.

NATIONAL ASSN. OF AUDUBON SOCIETIES, 1775 Broadway, New York City.

NEW YORK MICROSCOPICAL SOCIETY, American Museum of Natural History, New York City.

NEW YORK ZOOLOGICAL SOCIETY, 101 Park Ave., New York City.

PALEONTOLOGICAL SOCIETY OF AMERICA, American Museum of Natural History, New York City.

REPTILE STUDY SOCIETY OF AMERICA, INC., 536 East 84th St., New York City.

UNITED STATES NATIONAL MUSEUM, Tenth and Constitution Ave., Washington, D.C.

DIVISION XXIII

MEDICAL SCIENCES

MEDICINE, PATHOLOGY AND PHYSIOLOGY

By Max Trubek

Associate Visiting Physician, Bellevue Hospital, New York

POLIOMYELITIS

During 1937 there has been opportunity to better evaluate the clinical usefulness of a number of therapeutic procedures whose remedial properties had been judged either by limited application or by success only upon experimental animals. As usually happens but a small number of permanent additions to the medical armamentarium are sifted from an abundance of new substances or methods.

That the causative agent in poliomyelitis is a filterable virus seems a definitely established fact. A disease of similar manifestation can be reproduced in monkeys using the human infective material. It is definitely known that this virus is transmitted directly along the axones of the nerve cells, eventually reaching the cells of the anterior horn of the spinal cord. Instilled into the nasal passages of monkeys the virus reaches the olfactory bulbs by the fourth day, the spinal cord by the seventh. If the olfactory bulbs are severed, no monkey thus treated develops the disease. It had been assumed that, in the human, entrance and transmission of the virus was by analogous pathways and one of the important new prophylactic measures utilized in 1937 was based upon such an assumption. Certain chemicals such as alum, picric acid and zinc sulphate instilled into the region of the olfactory nerves of monkeys blocked the passage of subsequently introduced virus. The incidence of this disease among children is so small that comparative results can only be based upon trial in large groups. Even when properly applied by specialists familiar with nasal anatomy for the proper deposition of the chemical substances, this method did not give protection in all of the children upon whom it was tried.

Evidence has been marshalled that seriously question the conception that poliomyelitis in man is primarily a nasopharyngeal disease. Several investigators have noted the entire absence of post-mortem alteration of these structures in fatal cases. Alterations have not infrequently been noted within the mesenteric glands of the gastro-intestinal tract and the virus has been obtained from rectal washings. The disease has been transmitted to monkeys even after the olfactory bulbs have been sectioned when the virus was given by the vascular route. When the experimental disease is produced with virus by the intestinal route the symptoms so produced are far milder and more closely resemble the disease in man than the drastic paraplegia that follows the nasal and cerebral introduction of the virus. It is perfectly conceivable that in human beings the pathways of distribution of the virus to the nerve roots may be variable, the focus from which invasion proceeds may be within the gastro-intestinal tract or may enter the blood stream from some other nidus.

The enthusiastic claims for the use of human convalescent serum have

been largely abandoned. Its use followed the demonstrable ability of such serums to protect monkeys against the experimentally produced disease. Opinions still differ as to its value in the pre-paralytic stage; its use during the paralytic stage is worthless and its administration intraspinally has been condemned because of its tendency to aggravate the manifestations of meningeal irritation. The clinical use of vaccine has not been resumed subsequent to the discovery of the danger of using an incompletely inactivated vaccine. The development of paralysis in the limb where such vaccine was introduced in a few of the immunized children suggested the possibility that the living virus gained entrance to the nervous system directly along the nerves of the injected extremity. The value of nasal spraying with chemicals has yet to be established as useful for preventing infantile paralysis in man. The spray solution recommended is 1 per cent zinc sulphate, 1 per cent pontocaine and 0.5 per cent sodium chloride. This must be applied directly to the olfactory areas under direct vision. The procedure can be carried out effectively only by one trained in its technique. There is a widespread belief that the respirator ("iron lung") is uniformly life saving. The respirator is reserved for cases having respiratory paralysis from either diaphragmatic or intercostal involvement or both, not in the bulbar type of paralysis. Its use is often a life prolonging measure.

INSULIN SHOCK THERAPY IN SCHIZOPHRENIA

Recently Dr. Manfred Sakel introduced insulin as a therapeutic agent in the shock treatment of schizophrenia (dementia-praecox). His reported good results have generally been confirmed. The application of this treatment involves certain hazards and requires skillful management. Although spontaneous remissions are expected in about 30 per cent during this disturbance, the percentage of rapid restoration subsequent to insulin shock therapy has been many times higher, particularly when the duration of symptoms was less than six months. Ordinarily, however, because of the chronicity of the disorder schizophrenic patients occupy one fifth of all the hospital beds in the United States, reckoning general as well as mental hospital beds.

Brain tissue depends exclusively for nutrition and can oxidize only one substance, carbohydrates. When carbohydrate is removed from the blood as a result of excessive insulin injections the brain is temporarily deprived of its energy requirements. When shock doses of insulin are reached the patient goes into coma. Hypoglycemic treatment is continued daily except for periodic rest periods until the patient becomes symptom-free or until it is felt that treatment is of no avail. The patient will become more or less symptom-free especially when immediately following coma. Psychotic symptoms may recur later. Finally he becomes symptom-free all day; treatment is generally continued until the patient is normal both during hypoglycemia and thereafter. The insulin shock may usually be relieved by giving the patient sugar, either by mouth or intravenously; adrenalin solution injected in emergencies will also increase the blood sugar. When convulsive seizures occur treatment should be abruptly terminated by the use of intravenous sugar solutions.

A full knowledge of the disease is necessary to evaluate therapeutic response; it is not a weapon to be employed without complete psychiatric understanding of what constitutes improvement. The diagnosis of recovery is dependent upon the psychological skill of the examiner. One cannot directly diagnose complete recovery. One assumes it when careful searching reveals no signs of the illness. When the strict technique of Sakel's method is followed a number of careful workers have confirmed the finding of relatively rapid restoration of a completely normal mental state without any tendency to relapse. The results to date have been highly encouraging although sufficiently long periods have not yet elapsed for pro-

longed observations. The effects of treatment must not be confused with the ordinary fluctuations during the course of the illness. The method should not be attempted without careful analysis of the physical and mental state of the patient and then only under the immediate supervision of a well trained psychiatrist who should also be able to meet the dangers, such as collapse, delayed hypoglycemia or aspiration pneumonias which may accompany this form of therapy.

SULFANILAMIDE

The year witnessed the widespread application of this drug to a great variety of infectious diseases. During 1935 Domagk, in Germany, administered a chemical substance, designated as "prontosil," orally in mice and rabbits both for the prophylaxis and treatment of experimental infections with hemolytic streptococci. His treatment was successful against ordinary fatal doses of this virulent organism and the animals tolerated large amounts of the substance with no untoward symptoms. Subsequent reports of excellent results in patients suffering from infection due to that organism such as throat and tonsillar infections, septic abortion and erysipelas, appeared shortly, showing a rapid drop in temperature and relief of symptoms after initiation of therapy.

To confirm these findings Colebrook and Kenny, in England, using a highly virulent strain of hemolytic streptococcus to infect mice, began at once to get striking curative results with injections of prontosil. Infections which normally terminated in septicemia or peritonitis could be checked in the majority of mice, if treatment was commenced early, after the injection of the culture. The curative effect does not depend upon the antiseptic nature of the drug but on some altered compound formed within the body itself. The sulfonamide compounds, after alteration in the animal organism, act by inhibiting the growth of beta-hemolytic streptococci and injure these organisms in such a way as to permit them to be phagocytized by the white blood cells. Colebrook and Kenny thereafter used the drug in the treatment of 36 cases of puerperal infection with hemolytic streptococci. They concluded that the drug caused a definitely beneficial effect as evidenced by prompt improvement in symptoms, a drop in temperature and a reduction in the mortality rate from the usual one of about 24 per cent to 8 per cent in their series.

The first American report was made during the year by Long and Bliss at Johns Hopkins. Their careful studies corroborated many of the previous experiences with this substance. They treated multiple types of infections produced by the beta-hemolytic streptococcus with para-aminobenzene sulfonamide and its derivatives. Their cases include erysipelas, septicemia, puerperal sepsis, osteomyelitis, peritonitis, tonsillitis, scarlet fever, otitis media, etc. It was felt that treatment should be instituted immediately upon making the diagnosis and that about 48 hours is required before maximum therapeutic effects can be obtained. Striking results could not be expected when the infections were far advanced. For patients who are able to swallow, treatment by mouth with sulfanilamide tablets is most satisfactory, with patients, who cannot swallow or who are vomiting, parenteral (injection) medication is indicated. In these early and carefully controlled cases there was little evidence that para-aminobenzene sulfonamide and its derivatives were appreciably toxic for human beings, at least as far as their immediate effects were concerned. Mature clinical experience has subsequently brought to light dangers and contra-indications not at first known and which will be discussed later. Marshall and his associates have devised a simple and accurate method for the quantitative determination of the amount of the drug (now designated as sulfanilamide) present in the blood, urine and other body fluids. He has shown that it is rapidly absorbed from the gastro-intestinal tract, enters practically all the body fluids and is

excreted rapidly and almost entirely by the urinary tract. Retention of the drug in the blood occurs in cases of renal impairment.

New clinical applications of the drug have followed upon the earlier successes in the cases of the hemolytic streptococcus. In many instances good results justified its trial. Streptococcal meningitis has heretofore had an average mortality of over 90 per cent. With intensive therapy, using the drug by mouth and in solution for intraspinal injection, such a high percentage of recoveries have ensued in the hands of several groups of investigators as to preclude any possibility of the recoveries being fortuitous or due to other causes. When the meningeal infection is secondary to a focus, for example, the mastoid cells or a sinus, the source of dissemination must, of course, be simultaneously eradicated. Heretofore, however, growth of streptococci within the spinal fluid has of itself been a grave prognostic omen. Meningococcus meningitis, ordinarily treated with antimeningococcic serum, has thus far shown very satisfactory results when treated by sulfanilamide alone. The mortality rate in a series treated by Long has been lower than the recorded statistics for serum treatment. Urinary infections, particularly when due to the colon bacillus, have yielded to this treatment and more recently its application for the treatment of gonorrhea and its complications has evoked widespread interest and had led for a time to widespread unregulated and self medication.

The use of this drug has proven a valuable adjuvant in the treatment of acute gonorrhea in the male and female, but not all cases are benefited. An occasional patient will show a surprisingly prompt response with disappearance of organisms and symptoms, in striking contrast to the usual course. All the restrictions and instructions applied to the constitutional treatment of this infection must still be invoked. The patient must be seen at intervals and not left with a supply of a drug to take at his own choosing. An emphatic warning should be sounded as to the possibility of reactions from sulfanilamide.

Caution in administration is necessary so that in susceptible patients toxic drug effects are not produced with a massive dose already administered. A variable degree of transient nausea sometimes accompanies the oral administration of sulfanilamide; persistent intense nausea is an indication for withdrawal of the drug. Many cases of cyanosis occasionally associated with sulphemoglobinemia have been observed. The association of this condition with the use of saline cathartics is not fully established. Rarely, jaundice may occur. Fever also frequently occurs and it is important to differentiate between fever produced by the infection and fever produced by the chemical. Acute hemolytic anemia of severe proportions is an occasional complication due to administration of the drug. Toxic optic neuritis and agranulocytosis are other serious disorders which have been reported to have followed administration of sulfanilamide, and the development of toxic cutaneous eruptions as well as allergic manifestations are not infrequent.

During September and October of 1937 at least 73 persons died as a direct result of taking the drug known as "Elixir Sulfanilamide" manufactured and sold by the J. E. Massengill Company of Bristol, Tenn. The lethal effect of the "Elixir" was due to its content of diethylene glycol, particularly since it was administered in such large doses. This substance was used as a vehicle because sulfanilamide is insoluble in the various liquids commonly used in making medicines. No tests were made to determine the toxicity of either the separate ingredients or the finished product or to determine whether the sulfanilamide decomposed in the diethylene glycol.

The victims of the elixir were ill from about seven to 21 days. They suffered intense pain, and all exhibited very much the same symptoms: urinary suppression, abdominal pain, nausea and vomiting

and stupor. Unfortunately, many believe that sulfanilamide was the toxic agent. All experimental work has shown that diethylene glycol in the large doses administered was the causative agent of death. In prescribing sulfanilamide one still meets with objections to taking the drug because of confusion in the patient's mind as a result of the publicity attending the fatalities following use of the "elixir."

Under the present Food and Drugs Act there seems to be no provision which would prevent a repetition of this tragedy. Many physicians will rightly refuse to prescribe a drug which has not been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Any pharmaceutical house may have its products considered. Dangerous preparations would, of course, be rejected as would all products for which unwarranted therapeutic claims are made. The Council never accepted any brand of dinitrophenol, a chemical substance widely used several years ago, but now in disrepute. The transitory benefits of the loss of a little weight accompanied by the use of that drug were far outweighed by the very serious complications produced in some of the patients as well as by a number of deaths. The Council has accepted sulfanilamide as a therapeutic agent for the treatment of infections by the hemolytic streptococci. It is recognized as a valuable drug when properly applied, but unsafe when used without knowledge or restriction.

STUDIES IN THE DISEASES OF MUSCLE

Within the past few years a renewed interest in the treatment of disorders of the muscle followed the contributions of Dr. A. T. Milhorat and subsequently of Dr. William Boothby. Dr. Milhorat suggested the therapeutic use of amino-acetic acid (glycocol) and achieved some degree of success in his patients with progressive muscular dystrophy. Later this same substance was given to patients with myasthenia gravis and the reports from the Mayo Clinic were favorable in a large group of patients. The use of ephedrine in addition to this form of treatment produces further amelioration in those affected with myasthenia gravis, a disease hitherto relatively resistant to all attempted treatment. During his carefully conducted experiments upon patients Dr. Milhorat discovered some important sidelights of knowledge as regards the chemistry of muscle metabolism, particularly the possible rôle of amino-acetic acid as a precursor of creatine and was evidently able to differentiate in a chemical way between disease of muscle secondary to the degeneration of its nerve supply, such as infantile paralysis, and primary diseases of muscle, such as the dystrophies and myasthenia gravis. Therapy, although ameliorative, did not accomplish entirely satisfactory restoration of function. The search for more effective methods proceeded.

Dr. Walker, in England, discovered that prostigmine alleviated the muscular weakness of myasthenia gravis. The patients showed an immediate excellent response. A tolerance, however, is soon established so that the dose has to be continually augmented and finally loses its effectiveness unless an interval is allowed during which the other methods are utilized. Prostigmine seems to facilitate the action of acetylcholine and so stimulate the voluntary muscles *via* the myoneural junction, but in larger doses seems to paralyze this junction with resulting great weakness.

Another muscular disorder, myotonia cogentia, is the direct anithesis of myasthenia gravis. In this illness there seems to result an over-accumulation of acetylcholine at the motor end plates so that the muscle stimulation is excessive and prolonged. The individual seemingly "freezes" in an attitude once an impulse goes out for muscle contraction. The patient may be vigorous, but is greatly handicapped in the performance of muscular effort. During the past two years Dr. Alexander Wolf and Dr. Foster Kennedy have proven

the effectiveness of quinine in entirely alleviating this distressing disorder. There had previously been no effective remedial agent. In each of these patients, from 2½ to 5, 10 or 15 grains of quinine hydrochloride by mouth two or three times daily eliminates every vestige of myotonus. When quinine is withdrawn the symptoms recur. The treated patients returned to useful activities. Quinine possibly causes a diminution in the production of acetylcholine at the motor end plates. Just as this action is useful in myotonus congenita, so in the contrasting illness, myasthenia gravis, the symptoms of muscle weakness are accentuated by its use. The discovery of the usefulness of quinine in myotonus congenita is distinctly a contribution since the benefits are so decisive and apparently uninterrupted while the same dose of the drug is continued.

VITAMINE B DEFICIENCIES

Deficiency of the Vitamine B complex is related mainly to two diseases: vitamine B_1 to beri-beri and B_2 to pellagra. In the United States the two diseases may occur in combined form. Beri-beri has been known for centuries as a devastating disease of the rice-eating people of the Orient where it has been known in its "dry" and its "wet" form. The dry form manifests itself mainly in muscle wasting and peripheral neuritis. The wet form is associated with cardiovascular disturbances and generalized edema. Elements of each variety may appear in a combined form. The disease of the Orient, as we know it, is a severe illness whose manifestations as regards the cardiovascular system are: dilated heart, rapid feeble heart sounds, warm skin, edema, shortness of breath and eventually circulatory collapse. In addition, psychic, gastrointestinal, metabolic, blood and lung disturbances are often present.

In recent years, following the publications of Shattuck, Wechsler, Minot, Strauss and Cobb, we have learned to recognize certain types of neuritis as nutritional disturbances and particularly to lack of B_1. The conception of alcoholic polyneuritis has been materially changed; the work of Jolliffe has conclusively confirmed the opinion that the lack of vitamine B_1 in the diet of alcoholics is the cause for neuritis and not the toxic effects of alcohol as previously considered. Dr. Soma Weiss was instrumental in pointing out disturbances also in the cardiovascular system of many of these patients, changes similar to those described in Oriental beri-beri. The frequency of this occurrence was striking once it was systematically looked for. Most of the patients were chronic alcoholics; in a smaller group, drug addiction, pregnancy, diabetes, gastrointestinal disease, food fads and poverty played a rôle.

The symptomatology and objective findings resemble heart muscle failure, characterized by poor heart sounds with rapid rate, dilatation, murmurs, shortness of breath and often swelling of the extremities and congestion of the lungs. The diagnosis of beriberi cardiovascular disease is facilitated by the frequent simultaneous presence of other manifestations of dietary deficiency such as peripheral neuritis, psychosis, glossitis, diarrhea, dermatitis, anemia, etc. The absence of any recognized cause for cardiac failure and the history of abnormal diet or intestinal disfunction may point the way to correct diagnosis. The assured diagnosis may depend upon recovery after rest and vitamine B therapy. Prolonged dietary insufficiency may lead to structural heart changes so that recovery even with adequate vitamines may be retarded. Therapy may include diets rich in vitamines, the use of extracts rich in B_1 and of crystalline vitamine B_1.

Pellagra is due to vitamine B_2 deficiency and of itself is not associated with cardiovascular disturbances. The deficiency, however, is often not single but associated with B_1 deficiency and may present the combined picture. Alcoholic patients not infrequently present the manifestations of deficiency in both these vitamines. Not only do these patients

consume alcohol to the exclusion of important foodstuffs but the increased calories readily available from alcohol make the relative deficiency of vitamine B greater. The minimal requirement for that substance becomes increased as the caloric intake is augmented. Not only has our knowledge of deficiency diseases been remarkably increased in recent years but concentrated forms of therapy are now available, often, as in the case of vitamine B_1, in the form of a pure crystalline, injectable substance.

SURGERY

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PROGRESS

Occasionally a scientific discovery demonstrates its importance within the space of a year, but most of the advances in medical science require the test of time to determine their importance. Usually the growth of a new idea proceeds by little evolutionary steps, until its full significance is reached. During 1937 these evolutionary steps took place in certain fields of surgery, namely, in anesthesia, in endocrine disturbances, in cardiovascular disorders, and in surgical infections. In the last field mentioned there was perhaps the most sudden and convincing progress.

ANESTHESIA

Avertin.—Avertin has continued to warrant the confidence of patients as well as surgeons during the past year by minimizing the anxiety during the induction of anesthesia, by minimizing the amount of inhalation anesthesia necessary to supplement it and by minimizing the postoperative discomfort, frequently carrying the patient through the first two days after operation, with a period of somnolence in which there is very little memory of pain. The terror of anesthesia for children and for nervous adults has been almost completely dissipated by the use of this basal anesthetic.

Spinal Anesthesia.—This form of anesthesia still has its dangers and is far from being the ideal anesthetic which some of its more optimistic advocates have claimed. For one reason or another it not infrequently fails to give complete absence from sensation or complete relaxation and the fall in blood pressure cannot always be controlled. The occasional involvement of upper cervical segments of the spinal cord increases the risk of this procedure and apparently the variations between the specific gravity of the spinal fluid and the anesthetic medium sometimes results in a loss of control of the injected fluid. However, spinal anesthesia is frequently the anesthetic of choice in patients in which there is an infection in the lungs or upper respiratory passages, which may lead to a postoperative pneumonia, and it is also indicated in cases of intestinal obstruction where it is desired to contract the intestine as much as possible during and after the operative procedure. It is of the utmost importance, however, in the administration of a spinal anesthetic that the operator should be fully cognizant of the risks involved, and be able to anticipate and thus prevent as much as possible the complications which may develop. Of particular importance is a constant observation of the blood pressure before and after the administration of the anesthetic and both blood pressure and respiration during the course of the operation. Further study of the mechanism of this anesthetic as well as the cause of the postoperative accidents must be made in order to retain this as a safe form of anesthetic.

Cyclopropane.—This gas is being used with increasing confidence by a large number of anesthetists and in many clinics is replacing ethylene. The risk of administration is clearly mitigated by the free administration of oxygen, for this gas permits a higher

percentage of oxygen than almost any other anesthetic. It is important to realize, however, that too rapid induction of anesthesia and too great concentration of the gas may result in respiratory cessation and an intoxication of the cardiac muscle. A warning is given by the depression of the pulse and respiratory rates. Until further knowledge of this gas has been obtained, we shall have to consider its use as attended with greater risk than either ether or nitrous oxide.

Barbituric Acid Derivatives.—The commercial chemists are constantly experimenting in the field of the barbituric acid compounds in an effort to find a medication which will have more constant and predictable effects than heretofore. Nembutal, sodium amytal, seconal, medinal, veronal and others have all been used preliminary to anesthesia and in some cases as the sole anesthetic for short operations. Only one, however, namely evipan (evipal), has been used with convincing success. In the past it has been used largely for minor surgical procedures or painful dressings, but recently it has been used by more and more surgeons for longer procedures. It must be given intravenously with great care. The margin of safety as measured by its lethal effect is four or five times the anesthetic dose. A 10 per cent solution in distilled water is given intravenously with a syringe at the rate of 1 cc. every 10 or 15 seconds. The patient very quickly becomes somnolent; and after four or five cc. have been given, he generally falls into complete surgical anesthesia which may be maintained by the slow addition of three or four cc. during the next half hour. Anesthesia may be prolonged by the continued slow administration of the drug, a cc. at a time, when there is evidence of return of consciousness. The drug apparently has no cumulative effect, for it is rapidly destroyed in the liver and may be used in any case in which there is no damage to liver function.

The administration of evipan must be done by the fractional method, because there is a considerable variation in the response of individual patients, some requiring considerably more than others before anesthesia is obtained. Likewise the fall in blood pressure which is usually present, may be considerably more pronounced in some patients than in others. Occasionally the administration of evipan has precipitated an asthmatic attack, so that patients suffering from this disease should not be subjected to this danger. Although as much as 30 cc. of a 10 per cent solution have been administered without unfavorable results, great care should be used in watching for untoward effects after 15 cc. have been given.

SURGERY OF THE DUCTLESS GLANDS

Thyroid.—The total extirpation of the thyroid gland for decompensated heart disease or angina pectoris is still in the experimental stage. Some of those who originally advocated its use have given it up because of the unsatisfactory results, while others have been encouraged to continue its use because of the brilliant results obtained in certain cases. In many instances it has been used only when all other methods have failed in a very late stage of the disease. When further data are obtained in cases for which it is used earlier, it will doubtless be possible to determine more clearly the types of case which are likely to be benefited. The procedure, of course, does not attack the fundamental cause of the disease, it simply lowers the tempo of cardiac activity, thus permitting a damaged heart to carry a lighter load. Probably of far more fundamental significance is the approach to the problem advocated by Beck, who attempts to increase the blood supply of the cardiac muscle. This is considered below, in the section on cardiovascular diseases.

Parathyroid.—Increasing evidence during 1937 was presented which conclusively proves the relationship of parathyroid adenomata to multiple cystic disease of the bones. These adenomata are sometimes very difficult to find because of their aberrent location, but when the disease

has been demonstrated by x-ray and the changes in the blood phosphatase and calcium have been determined, a search must be made for the tumor, because no other treatment is efficacious. Profound disturbances which frequently occur after the removal of these tumors have given considerable opportunity for studying the function of the parathyroid. Apparently these tumors take over the function of the more normal parathyroids to such an extent that when the tumors are removed the normal glands fail to function at first, and the patient goes through a period of discomfort or disability only partially relieved by the administration of parathyroid extract and calcium until the return of the function of the normal glands has occurred. This is a field of surgery in which co-operation with experts in the field of endocrinology is of the utmost importance for the successful outcome of the operation.

Pancreas.—In a similar manner adenomas of the Islands of Langerhans of the pancreas or a hyper function of a grossly normal gland have resulted in profound disturbances which can only be relieved by the surgical removal of those tumors or a large part of the gland itself. In this disorder the symptoms are frequently profound and incapacitating. They are largely in the neurological field so that the patients are frequently thought to be epileptics and seek the advice of a neurologist or a psychiatrist. The real cause of the condition can readily be determined by a study of the blood sugar. The milder forms yield a test of 75 mg. per cent of blood, while the more severe forms may fall as low as 25 mg. In this condition the postoperative course is relatively smooth and is not attended by the profound symptoms which occur in cases of parathyroid tumor. The rest of the gland apparently very promptly takes on its proper function, the blood sugar approaches normal figures, and the symptoms largely clear up within a relatively short time.

Suprarenals.—The relationship of the suprarenal glands to blood vessel tone has long been well known and the corollary that hypertension is due to over-activity of the suprarenals has been a natural sequel to this knowledge. But tumors of the adrenals are rarely found in these cases and a partial removal of the gland has not given the favorable results hoped for. Likewise, operations on the nerves which are supposed to control the activity of these glands, have not met with any great measure of success. Considerably more work must be done in this field before a clear-cut demonstration can be made of the rationale of this procedure.

CARDIOVASCULAR DISEASE

The Heart.—Reference has been made above to the total removal of the thyroid gland in cases of cardiac decompensation or coronary artery sclerosis. In recent years there has been very clear clinical evidence with a background of careful animal experimentation to prove that the blood supply of the heart which has been cut down by a thickening of the coronary arteries can be improved greatly by the development of collateral circulation. If the pericardium is opened and the surface of the heart roughened by an abrasive instrument and if a portion of the pectoralis major muscle is turned into the cavity and placed in contact with the surface of the heart, adhesion or cohesion takes place and new blood vessels grow in which are able to carry additional nourishment to the cardiac musculature. Although the risk of operation is considerable, particularly in those patients who have already compromised their circulation, in a large proportion of cases, patients previously incapacitated for work have been restored to such an extent that they are once more capable of doing manual labor. With further improvement in the technique of this procedure and the gradual development of the experience of surgeons in this field this may well be considered one of the notable advances in surgery that has been made in the last few years because it opens up a field hitherto closed.

Hypertension.—Reference has been made above to the approach to the problem of hypertension by an attempt to minimize the activity of the adrenal glands either by removing adrenal tumors or portions of apparently normal glands or by cutting off their nerve supply. Hypertension in which there is evidence of renal disease has also been studied from the point of view of improving the blood supply of the kidney, in order to favor the better elimination of those substances normally excreted by the kidneys, the retention of which has resulted in high blood pressure. Very careful experimental work on animals has demonstrated that the gradual occlusion of the renal arteries will result fairly constantly in a maintained hypertension. The occlusion of other arteries in certain regions of the peripheral vascular system, likewise raises blood pressure, and certain disorders of the endocrine glands which help to control vessel tonus, either directly or indirectly, may play a part. The problem of hypertension is very complicated and it will require a great deal of experimental and clinical data before any significant progress can be made in this field.

Peripheral Vascular Disease.—Perhaps even more complicated than the mechanism of hypertension is the disurbance of circulation in the extremities or in internal organs due to the occlusion or the spasm of the blood vessels supplying these areas. The attempt to develop collateral circulation by passive vascular exercises has not made much progress in the past year. It has disappointed the hopes of many of the advocates of this procedure and others who have not perhaps given it the careful trial which the early results seemed to warrant. Probably the chief reason for this failure is that the fundamental causes of these disorders are not known and the treatment cannot therefore attack the source or prevent recurrence. Further attempts must be made in this important field and progress must be made by the evolutionary process.

SURGICAL INFECTIONS

Zinc Peroxide in the Treatment of Anaerobic and Microaerophilic Infections.—During the past few years there has been increasing evidence that an active preparation of zinc peroxide is effective in preventing the spread and overcoming those infections in which the anaerobic and microaerophilic organisms play a predominant role. These infections are frequently overlooked or undiagnosed because of the inadequate method of anaerobic bacterial cultivation generally used by most hospitals and the limited knowledge of anaerobic bacteriology by a great number of bacteriologists. Frequently anaerobic infections spread extensively before the surgeon is aware of their nature. In many cases the process is acute and valuable time is lost by the delay in diagnosis. In other cases the disease is chronic and the nature of the process is only suspected when the infection does not follow the usual course of those due to aerobic organisms.

If these diseases can be diagnosed early and the proper medication applied, they usually respond promptly. Zinc peroxide is apparently effective in all types of microaerophilic and anaerobic infections in which it can be applied intimately to the area involved. Unfortunately there are several brands of zinc peroxide on the market which are not effective and which do not produce sufficient oxygen in the environment of the infection to control it. A simple test may be used to determine whether or not the zinc peroxide is effective, for when it is suspended in an equal quantity of water effective material will settle rapidly leaving a clear supernatant fluid. It will remain as a curdy precipitate at the bottom of the tube, and in the course of an hour bubbles of oxygen may be seen to form in the sediment.

This material may be used prophylactically in wounds in which the anaerobic and microaerophilic organisms are likely to develop, such as wounds of the mucous membrane of the mouth, caused by sharp ob-

jects from without or within, as with fractured jaws or following the extraction of teeth. Wounds anywhere caused by human bites or missiles or following operative procedures in the region of the mouth or anus, have likewise responded favorably when dressed with zinc peroxide as a prophylactic.

Sulphanilamide.—In 1935 some experiments were reported on the protective action of a new dye, called prontosil, in the treatment of hemolytic streptococcus infections in experimental animals. Success in these experiments indicated the employment of this dye in human infections, and during 1937 there was an abundant quantity of experimental and clinical evidence to indicate that a new chemotherapeutic agent has been found which can be depended upon in the majority of cases to control the spread of hemolytic streptococcus infections.

The first convincing report appeared in the treatment of puerperal fever, but more recently it has been applied to all types of hemolytic streptococcus infections. Its results have been striking, and the use of it relatively safe so that it has had widespread clinical application in other bacterial infections, and in cases in which the causative organism was unknown. In many of these there has been no result, but in infections with the meningococcus and the gonococcus, and to a lesser extent with the penumococcus, there is some evidence of its efficacy. In the past the hemolytic streptococcus has been the most dangerous organism in cases of blood poisoning. It frequently gets into the body through minor cuts and other surface injuries and also invades the body through the nose and throat. It is the most frequent cause of puerperal fever. When it has invaded the body through any of these portals the prognosis has been extremely grave. In cases in which the invasion has reached the meninges of the brain the disease has been almost always fatal.

Since the original report the active principle of the dye has been found to be sulphanilamide which is a colorless substance and can be administered by mouth with rapid absorption and fairly rapid elimination. When given to cases of hemolytic streptococcus infection, in the majority of instances there has been a prompt subsidence of the local and general manifestations of the infection. In only a relatively small proportion of cases has there been evidence of toxicity. When toxic symptoms have occurred they have generally been mild and when they have appeared the cessation of administration of the drug has been promptly followed by disappearance of the symptoms, although a few deaths have been reported which indicate that certain persons may have an idiosyncrasy to the drug. Very frequently surgical procedures have been avoided by the use of this medication, and where surgery has been necessary, the supplementary use of sulphanilamide has favored the process of healing. The discovery of this new chemotherapeutic agent has offered great encouragement to further experimentation in this field with the hope that other related substances may be found which will similarly control other types of infection.

PUBLIC HEALTH AND HYGIENE

By Ira V. Hiscock

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PUBLIC HEALTH AND SOCIAL SECURITY

Continued progress was made in 1937 under the Social Security Act in the establishment of full-time county health units, in the extension of essential measures in health administration, maternal and child health, in research, and in the training of personnel. "The most important single factor in the success of a public health program is the fitness of those to whom the administration of the program is entrusted." (The Public Health Program, Social Security Act, Supplement, U. S. Government Printing Office, 1937.) That all public health workers should eventually receive at least one full year of special training has been stated as highly desirable, and one-year fellowships have been provided in most of the States for certain specially selected individuals in key positions.

PNEUMONIA

Following extensive work in Massachusetts, progress along several lines has been made toward the control of pneumococcus pneumonia. Facilities for rapid sputum typing and for serum production and distribution have been established in several States, and materially expanded in others, notably in New York State in conjunction with a special demonstration of pneumonia control. Many different types of pneumococci may cause pneumonia. Effective sera for the treatment of several of these types have been developed, including those for Types I, II, V, VII, and VIII. Pneumonias due to different types of pneumococcus, to the hemolytic streptococcus, or to psittacosis virus, have distinctive features and the etiological classification of the cases has shown that the different groups present rather characteristic disease pictures.

VIRUS DISEASES

Influenza is believed to be primarily a clinical and epidemiological syndrome which appears in epidemic waves of varying proportions ("Epidemiological Studies in Influenza," Thomas Francis, Jr., *American Journal of Public Health and the Nation's Health*, Vol. 27, No. 3, March, 1937.) It seems likely that included in the term influenza are several different diseases apparently so similar from a clinical standpoint as to be indistinguishable. "Influenza is not the ordinary head cold usually characterized by running nose and absence of fever; it is not the acute tonsillitis or sore throat of streptococcus origin; it is not the low grade fever of chronic sinusitis with its accompanying malaise; it is not the nausea, vomiting and diarrhea of food poisoning; it is not lobar pneumonia. . . . Influenza is rather an acute infectious respiratory disease of epidemic nature which is of variable extent and severity." Distinct progress has been made in studies of influenza since the isolation of a filterable virus from human influenza; but knowledge is incomplete and simple tests available for widespread immunity studies without large supplies of animals are still wanting. Yet virus grown in tissue culture has been used in experimental vaccination with encouraging results. ("Virus Diseases and Public Health," W. A. Sawyer, *American Journal of Public Health and the Nation's Health*, Vol. 27, No. 11, Nov. 1937.)

Knowledge of virus diseases is advancing rapidly and opening promising new fields of study and of disease control. These diseases are of great importance in the field of preventive medicine. The status of yellow fever was reported in these columns a year ago. This tropical virus disease which used to invade the United States and produce devastat-

ing epidemics still threatens. Until more is known of the epidemiology of jungle yellow fever, the attack on this disease in its endemic areas will be difficult. Meanwhile improved methods of vaccination are being used increasingly to protect people under exceptional exposure. ("The Use of Yellow Fever Virus Modified in Vitro Cultivation for Human Immunization," M. Theiler and H. H. Smith, *J. Exper. Med.* 65:787–800, June, 1937.)

The chorio-allantoic membrane of chick embryos provides a uniform living medium for the propagation in pure culture of the virus of vaccinia. The virus is found to proliferate rapidly so that within 72 hours after inoculation a lesion develops large enough to make the production of smallpox vaccine simple and practical. While experience with this method is limited, the results are promising. ("Production and Use of Smallpox Vaccine Virus Cultivated in the Chorio-Allantoic Membrane of Chick Embryos," G. John Buddingh, *Jour. A.P.H.A.*, Vol. 27, No. 11, Nov. 1937.)

SYPHILIS CONTROL

Interest in the development of more adequate methods for the discovery and control of syphilis has been stimulated by Surgeon General Parran's book, *Shadow on the Land*, which defines the pathway toward this objective and indicates the importance of public health in national life. (*Shadow on the Land—Syphilis*, by Thomas Parran, Surgeon General of the U. S. Public Health Service, New York, Reynal & Hitchcock, 1937, 309 pp. Price $2.50.) That syphilis is one of our greatest and most devastating public health and medical problems is stressed. Furthermore, syphilis is described as a communicable disease, a plague that disables half a million Americans a year, that can be brought under control in a generation if necessary funds are made available and if present knowledge of this disease is actively applied. Throughout the country, state and local health departments have strengthened their machinery for combating this disease by increasing laboratory diagnostic facilities and clinics for treatment, by epidemiological control, and by education.

PLAGUE

Plague has become increasingly recognized as a problem in several Western States, as well as in California, infected rodents having been found in almost every State of the Pacific slope. In many areas, fleas combed from rodents, including ground squirrels, chipmunks, woodrats and field mice, showed plague infection. Infected fleas were found on infected rodents and on many that showed no signs of disease. ("A Year's Review of Public Health in California," W. M. Dickie, California State Department of Public Health *Weekly Bulletin*, Aug. 28, 1937.)

PREVENTIVE MEDICINE ON THE HIGHWAY

Experimental research into the "human" or psycho-physical factor in traffic accidents marks an advance in the approach to safety education and suggests that accident prevention may become a phase of preventive medicine. Preliminary studies (see *Health Bulletin for Teachers*, Vol. VIII, No. 10, June 1937, Metropolitan Life Insurance Co., New York) indicate that the driver's physical and emotional "parts" exert as great an influence on highway safety as mechanical construction of car and highway, or the stringency of traffic regulations. In the traffic courts of a large city, for example, where judges referred frequent offenders to a psychopathic clinic, a close relationship was noted between the driver's emotional attitude and accident proneness.

HEALTH AND HOUSING

Interest has developed in the United States in the Hygienic Aspects of Housing, following a conference of experts on such technical problems as heating, ventilation, lighting, sanitation and safety, housing policy and management. (Report

of Round Table on the Hygienic Aspects of Housing, C.-E. A. Winslow, in *New Health Frontiers,* The Milbank Memorial Fund, 40 Wall St., New York, 1937.) A new committee on housing has been established by the American Public Health Association and operates a field laboratory for special studies. In the main, it has been suggested that the argument for good housing should be based on common sense knowledge of the demonstrated bad effects of individual specific housing defects and that these should be interpreted in terms of a concept of health which includes not only freedom from immediate hazards to life, but the opportunity for fullness of healthy living, mental and social, as well as physical. (See "Recent Advances in Our Knowledge of the Problems of Air Conditioning," C.-E. A. Winslow, *Amer. Jour. P. H.,* Vol. 27, No. 8, Aug. 1937.) It has been stated that to satisfy minimum needs, the construction or remodeling of from 6,000,000 to 9,000,000 homes is essential during the next ten years, and that due to economic problems, a substantial proportion of this necessary housing must be built and maintained by government subsidy.

HEALTH EDUCATION

Health education of the public, in the schools, and in professional groups is receiving increased emphasis. "We are grasping the fact," says Ray Lyman Wilbur, "that education is not a mere transfer of information from one mind to another, but that it is a manifold process by which a growing person learns how to operate under his own power and will. Particularly in the sphere of health we must learn by doing, and what we do must be done with understanding." In addition to increased services and advances by the American Medical Association, National Education Association, National Tuberculosis Association, motion picture industry, various foundations and many schools and health agencies, the Surgeon General established in the U. S. Public Health Service an Office of Health Education to carry out experimental studies and assist those interested in health education. ("Recent Progress in Health Education," W. P. Shepard, *Amer. Jour. P. H.,* Vol. 27, No. 5, May, 1937. See also *Health Education,* by W. W. Bauer and Thos. Hull, W. B. Saunders & Co., Philadelphia.)

MENTAL HYGIENE

The Second International Congress on Mental Hygiene was held in Paris, July 19–24, 1937. The subject of "Eugenics in the Prophylaxis of Mental Illness," presented by Professor Rüdin of Munich, was discussed by representatives of several nations. The general opinion of the discussants was that a procedure that might apply in Germany (sterilization) could not be accepted by all countries as scientific or as applicable to the whole world. Additional papers brought out other aspects of prophylaxis of mental disorders. "Mental Hygiene in the Family," "Mental Hygiene and Education" and "Alcohol and Drug Addiction" were topics in which prevention of the more serious disorders was stressed. This was followed by the First International Congress on Child Psychiatry.

A survey of research activities in tax-supported hospitals (principally state mental hospitals), directed by the National Committee for Mental Hygiene, led to the announcement of results in 1937. Approximately 20 institutions were doing excellent research work. About 100 men, well-trained and qualified for research, were found in these institutions and were ready to start research programs as soon as financial assistance could be given. Less than 10% of the hospital budgets could be considered in any sense as contributing to research. The report states that tax-supported institutions should contribute a larger part of their budget toward co-ordinated research.

The National Committee for Mental Hygiene sponsored the publication of *The Mentally Ill in America* (Deutsch, Albert; Doubleday, Doran & Co., Inc., New York, 1937), a book that presents for the first time

the complete story, from Colonial times down, of this phase of medical and social history. It shows the changing medical and public attitudes toward mental diseases; the gradual expansion of psychiatric and mental hygiene activities and the progress from the early superstitions and folklore remedies to the scientific approach of twentieth century psychiatry. The proper historical approach to the problem of mental disorders has now been supplied.

It has long been the feeling of leaders in psychiatry and mental hygiene that a greater integration of psychiatric principles and concepts with education would be a valuable procedure. Within the past year the National Committee for Mental Hygiene and several state mental hygiene societies have renewed their efforts in this direction. The publication of *Understanding the Child,* a periodical for teachers, has been taken over by the National Committee, thereby making it nationwide. The mental hygiene societies of Michigan, Delaware, Pennsylvania and Connecticut as well as others have started special committee studies that should result in a much closer relationship between mental hygiene and education.

VITAL STATISTICS

By Halbert L. Dunn

Chief Statistician for Vital Statistics, U. S. Bureau of the Census

ORGANIZATION

The reorganization of the Division of Vital Statistics, commenced in June, 1935, was completed during 1937 by internal readjustment of the sectional work of the Division. Without dropping new features introduced into the divisional work of 1935, the routine coding and release of vital statistics was advanced about two months during the course of the year. Special experiments were started during the year on the transcribing of birth and death information by microfilm rather than by hand methods. If these experiments are effective, it will be possible eventually to advance the work of the Division to within four months of a current basis.

INSTRUCTION MANUAL

The *Instruction Manual* for the routine coding and tabulating of vital statistics was revised. The second edition of this manual incorporates all changes in the coding procedures of the International List of Causes of Death since the fourth edition (1930) of this list. The manual also contains the extensive geographical code used by the Division of Vital Statistics.

ANNUAL PUBLICATIONS

In addition to the annual Mortality volume, and the annual Birth, Stillbirth, and Infant Mortality volume, the Bureau has developed several current publications in vital statistics: *Weekly Health Index, Monthly Automobile Summary, Weekly Accident Bulletin, Monthly Vital Statistics Bulletin, Vital Statistics–Special Reports* series, and the *Registrar. The Weekly Accident Bulletin* is a new series which reports automobile accidents each week in a number of cities of 50,000 and over. By the end of the fiscal year, 121 cities were reporting automobile fatalities for this bulletin. The *Registrar* is a co-operative official news service of the Division of Vital Statistics and its special agents in the States and local bureaus of vital statistics. Volume I of the *Vital Statistics*—Special Reports series, 406 pages in length—has been completed. It deals with birth, death, infant mortality, and stillbirth statistics. These facts are released in this publication at least a year before they would customarily have been made available to the public. Volume 2 of this series deals entirely with individual state releases. These state summaries for the year 1935 contain the more important vital statistics of interest to each State and are released as soon as the tabulations for a particular State are available. Since the tables in all these summaries are uniform, comparisons can be made between States more easily than was heretofore possible.

SPECIAL STUDIES

Several special studies in vital statistics have been carried on during the year. The Bureau has developed an institution code in co-operation with the American Medical Association which has checked the Bureau's code with the institutions included in their files on hospitals. Numerous small studies in connection with fatal accident statistics have been released, and a pocket reference accumulation of census information on accidental deaths has been prepared. In addition, considerable field work has been carried out in the preparation of supplementary accident schedules which will integrate the statistical work carried on by different States in this field. A number of special statistical tabulations, some international in character, have been made in connection with causes of death. The international study, started in 1935, to compare the differences of coding of joint causes of death in various

nations, was completed and will soon be published. Joint cause tabulations have been made for all causes of death in the State of Maryland and for all maternal causes throughout the entire United States in the year 1935. These tabulations will also be of assistance in the work of revising the International List of Causes of Death preparatory to the 1938 International Conference in Paris.

FIELD ACTIVITIES

An extensive test to prove the effectiveness of the post-card method of testing birth registration completeness was conducted in Maryland. A policy of testing completeness of birth registration by counties rather than by States was inaugurated, and several counties in Nebraska and Maryland were so tested. The entire State of Louisiana was tested for completeness of birth registration, and several months of field work were conducted to aid registration completeness in Oklahoma, Arkansas, North Carolina, and Nebraska. Closer working relationships in connection with field problems of vital statistics are being established with such groups as the United States Public Health Service, the Children's Bureau, the Office of Education, the Social Security Administration, Works Progress Administration, the Coroners' Association of America, etc.

SUMMARY TABLES

The summary tables which are shown portray the principal changes in the major factors of birth and death during the year 1936. The death rate of the country increased from 10.9 per 1,000 population in 1935 to 11.5 in 1936. The infant mortality also showed an increase from 55.7 per 1,000 live births in 1935 to 57.1 in 1936. The birth rate at the same time went down slightly from 16.9 per 1,000 to 16.7.

Although the final rates for the entire country for selected causes of death are not available for 1936, it is evident in the 1935 figures that the principal changes involve a continuation in the decline of the tuberculosis death rate and a continued increase in that of cancer. Influenza and its complications took a somewhat higher toll during the year.

GROWTH OF THE REGISTRATION AREAS

Calendar Year	Estimated population of continental United States	Death registration area in continental United States					Birth registration area in continental United States				
		Population		Deaths			Population		Births		
		Number	Percent of total	Number	Rate per 1,000 population	Number of states	Number	Percent of total	Number	Rate per 1,000 population	Number of states
1936	128,429,000	128,429,000	100.0	1,479,228	11.5	48	128,429,000	100.0	2,144,790	16.7	48
1935	127,521,000	127,521,000	100.0	1,392,752	10.9	48	127,521,000	100.0	2,155,105	16.9	48
1934	126,626,000	126,626,000	100.0	1,396,903	11.0	48	126,626,000	100.0	2,167,636	17.1	48
1933	125,770,000	125,770,000	100.0	1,342,106	10.7	48	125,770,000	100.0	2,081,232	16.5	48
1932	124,974,000	120,291,000	96.3	1,308,529	10.9	47	119,027,000	95.2	2,074,042	17.4	47
1931	124,113,000	119,479,000	96.3	1,322,587	11.1	47	117,522,000	94.7	2,112,760	18.0	46
1930	123,091,000	118,472,000	96.2	1,343,356	11.3	47	116,556,000	94.7	2,203,958	18.9	46
1929	121,526,429	116,317,515	95.7	1,386,363	11.9	46	115,097,972	94.7	2,169,920	18.9	46
1928	119,861,607	114,258,516	95.3	1,378,675	12.1	44	113,050,663	94.3	2,233,149	19.8	44
1927	118,196,785	108,177,568	91.5	1,236,949	11.4	42	103,575,656	87.6	2,137,836	20.6	40
1926	116,531,963	104,938,301	90.1	1,285,927	12.3	41	89,682,479	77.0	1,856,068	20.7	35
1925	114,867,141	102,951,999	89.6	1,219,019	11.8	40	87,486,096	76.2	1,878,880	21.5	33
1924	113,202,319	100,082,062	88.4	1,173,990	11.7	39	86,256,025	76.2	1,930,614	22.4	33
1923	111,537,497	97,816,104	87.7	1,193,017	12.2	38	80,694,406	72.3	1,792,646	22.2	30
1922	109,872,675	93,866,240	85.4	1,101,863	11.7	37	79,415,841	72.3	1,774,911	22.3	30
1921	108,207,853	89,102,434	82.3	1,032,009	11.6	34	70,738,177	65.4	1,714,261	24.2	27
1920	106,543,031	87,632,592	82.3	1,142,558	13.0	34	63,740,689	59.8	1,508,874	23.7	23
1919	105,003,065	85,166,043	81.1	1,096,436	12.9	33	61,483,423	58.6	1,373,438	22.3	22
1918	103,587,955	81,333,675	78.5	1,471,367	18.1	30	55,515,241	53.6	1,363,649	24.6	20
1917	102,172,845	74,984,498	73.4	1,068,932	14.3	27	54,771,416	53.6	1,353,792	24.7	20
1916	100,757,735	71,349,162	70.8	1,001,921	14.0	26	32,788,670	32.5	818,983	25.0	11
1915	99,342,625	67,095,681	67.5	909,155	13.6	25	30,936,179	31.1	776,304	25.1	10
1914	97,927,516	65,813,315	67.2	898,059	13.6	25					
1913	96,512,407	63,200,625	65.5	890,848	14.1	24					
1912	95,097,298	60,359,974	63.5	838,251	13.9	23					
1911	93,682,189	59,183,071	63.2	839,284	14.2	23					
1910	92,267,080	53,831,742	58.3	805,412	15.0	21[1]					
1909	90,691,354	50,870,518	56.1	732,538	14.4	18					
1908	89,073,360	46,789,913	52.5	691,574	14.8	17					

1907	87,455,366	43,016,990	49.2	687,034	16.0	15
1906	85,837,372	41,983,419	48.9	658,105	15.7	15
1905	84,219,378	34,052,201	40.4	545,533	16.0	10
1904	82,601,384	33,345,163	40.4	551,354	16.5	10
1903	80,983,390	32,701,083	40.4	524,415	16.0	10
1902	79,365,396	32,029,815	40.4	508,640	15.9	10
1901	77,747,402	31,370,952	40.3	518,207	16.5	10
1900	75,994,575[2]	30,765,618	40.5	539,939	17.6	10
Census Year						
1900	75,994,575[2]	28,807,269	37.9	512,669	17.8	9
1890	62,947,714	19,659,440	31.2	386,212	19.6	8
1880	50,155,783	8,538,366	17.0	169,453	19.8	2

[1] North Carolina is included, although returns were received only from municipalities of 1,000 population or more in 1900; the remainder of the State was added in 1916.

[2] Population for Census year ending May 31.

NOTE.—For every year the District of Columbia was in both areas, but is not included in the "number of States"; the death area also included a varying number of registration cities in nonregistration States.

NATALITY AND MORTALITY, BY STATES, 1936

Area	Estimated population July 1, 1936	Live births		All deaths		Deaths under 1 year	
		Number	Rate per 1,000 estimated population	Number	Rate per 1,000 estimated population	Number	Per 1,000 live births
United States	128,429,000	2,144,790	16.7	1,479,228	11.5	122,535	57.1
Alabama	2,864,000	60,116	21.0	31,153	10.9	4,017	66.8
Arizona	406,000	9,545	23.5	6,551	16.1	1,142	119.6
Arkansas	2,023,000	33,520	16.6	18,465	9.1	1,707	50.9
California	6,059,000	84,502	13.9	76,094	12.6	4,489	53.1
Colorado	1,066,000	18,279	17.1	13,674	12.8	1,354	74.1
Connecticut	1,734,000	22,228	12.8	17,858	10.3	933	42.0
Delaware	259,000	3,922	15.1	3,317	12.8	253	64.5
District of Columbia	619,000	11,704	18.9	9,094	14.7	847	72.4
Florida	1,642,000	28,097	17.1	20,953	12.8	1,669	59.4
Georgia	3,060,000	61,658	20.1	37,263	12.2	4,314	70.0
Idaho	485,000	10,224	21.1	5,014	10.3	526	51.4
Illinois	7,845,000	112,167	14.3	92,806	11.8	5,246	46.8
Indiana	3,459,000	54,034	15.6	42,470	12.3	2,742	50.7
Iowa	2,543,000	42,715	16.8	28,432	11.2	2,057	48.2
Kansas	1,886,000	29,998	15.9	21,674	11.5	1,554	51.8
Kentucky	2,883,000	55,778	19.3	32,378	11.2	3,726	66.8
Louisiana	2,122,000	43,828	20.7	25,974	12.2	3,151	71.9
Maine	853,000	15,302	17.9	11,325	13.3	981	64.1
Maryland	1,674,000	26,588	15.9	21,960	13.1	1,838	69.1
Massachusetts	4,425,000	61,704	13.9	52,052	11.8	2,872	46.5
Michigan	4,783,000	88,427	18.5	54,781	11.5	4,482	50.7
Minnesota	2,635,000	47,576	18.1	28,630	10.9	2,113	44.4
Mississippi	2,008,000	49,446	24.6	24,128	12.0	2,879	58.2
Missouri	3,959,000	55,916	14.1	48,767	12.3	3,235	57.9
Montana	531,000	10,400	19.6	6,255	11.8	593	57.0
Nebraska	1,364,000	23,798	17.4	13,752	10.1	1,049	44.1
Nevada	100,000	1,419	14.2	1,439	14.4	99	69.8
New Hampshire	508,000	7,679	15.1	6,438	12.7	355	46.2
New Jersey	4,328,000	53,833	12.4	44,959	10.4	2,386	44.3
New Mexico	422,000	12,907	30.6	6,248	14.8	1,572	121.8
New York	12,935,000	182,469	14.1	153,545	11.9	8,567	47.0
North Carolina	3,457,000	76,182	22.0	35,630	10.3	5,247	68.9
North Dakota	703,000	13,571	19.3	5,654	8.0	674	49.7
Ohio	6,713,000	103,703	15.4	80,941	12.1	5,314	51.2
Oklahoma	2,528,000	41,815	16.5	23,250	9.2	2,509	60.0
Oregon	1,017,000	13,975	13.7	12,367	12.2	619	44.3
Pennsylvania	10,136,000	159,393	15.7	112,711	11.1	8,153	51.2
Rhode Island	681,000	10,186	15.0	8,126	11.9	491	48.2
South Carolina	1,860,000	39,292	21.1	21,426	11.5	3,174	80.8
South Dakota	692,000	12,879	18.6	6,157	8.9	615	47.8
Tennessee	2,864,000	50,571	17.7	32,522	11.4	3,464	68.5
Texas	6,117,000	111,602	18.2	65,803	10.8	7,951	71.2
Utah	516,000	12,551	24.3	5,126	9.9	661	52.7
Vermont	380,000	6,449	17.0	4,957	13.0	374	58.0
Virginia	2,671,000	51,247	19.2	32,202	12.1	3,787	73.9
Washington	1,643,000	23,376	14.2	19,356	11.8	1,062	45.4
West Virginia	1,830,000	40,853	22.3	19,908	10.9	2,908	71.2
Wisconsin	2,908,000	52,613	18.1	33,242	11.4	2,510	47.7
Wyoming	233,000	4,753	20.4	2,401	10.3	274	57.6

DEATH RATE PER 100,000 ESTIMATED POPULATION FOR PRINCIPAL CAUSES IN THE REGISTRATION AREA IN CONTINENTAL UNITED STATES

CAUSE OF DEATH	1900	1905	1910	1915	1920	1925	1930	1935
All causes (excl. of stillbirths)	1,775.0	1,602.0	1,496.2	1,355.0	1,303.8	1,184.1	1,133.9	1,092.2
Typhoid and paratyphoid fever	35.9	27.8	23.5	12.4	7.8	8.0	4.8	2.8
Smallpox	1.9	0.9	0.4	0.3	0.6	0.7	0.1	—[1]
Measles	12.5	7.5	12.3	5.4	8.8	2.3	3.2	3.1
Scarlet fever	10.2	6.7	11.6	3.6	4.6	2.7	1.9	2.1
Whooping-cough	12.1	10.6	11.4	8.1	12.5	6.7	4.8	3.7
Diphtheria	43.3	23.6	21.4	15.7	15.3	7.8	4.9	3.1
Influenza and pneumonia (all forms)	203.4	167.7	162.1	149.1	208.0	123.4	102.7	104.0
Influenza	22.9	18.9	14.4	16.0	70.9	29.7	19.5	22.1
Bronchopneumonia[2]	21.9	34.1	47.1	49.9	54.5	38.7	34.3	33.4
Lobar pneumonia	158.6	114.7	46.4	65.8	73.0	49.9	45.4	45.2
Pneumonia, unspecified			54.3	17.4	9.5	5.1	3.5	3.2
Erysipelas	5.1	4.4	4.5	3.5	3.1	2.4	2.1	1.7
Epidemic cerebrospinal meningitis	(3)	(3)	0.4	1.4	1.6	1.1	3.6	2.1
Tuberculosis of the respiratory system	180.5	166.7	136.0	123.5	97.0	75.9	63.4	49.8
Other forms of tuberculosis	21.4	25.6	24.3	22.8	17.0	10.8	8.1	5.2
Malaria	7.9	3.9	2.2	2.3	3.6	2.1	2.9	3.5
Cancer and other malignant tumors	63.0	71.4	76.2	81.4	83.2	92.8	97.3	107.9
Diabetes mellitus	9.7	12.9	14.9	17.5	16.0	16.9	19.0	22.2
Cerebral hemorrhage and softening	71.5	74.7	75.7	81.2	81.7	81.0	81.0	76.6
Diseases of the heart[4]	132.1	152.2	158.8	165.7	159.1	185.7	205.7	213.1
Bronchitis	45.7	33.2	23.4	17.4	13.2	6.5	4.2	3.1
Diarrhea and enteritis[5]	133.2	115.7	117.4	72.1	54.3	39.4	26.3	14.1
Appendicitis	9.7	11.9	11.4	12.5	13.4	15.2	15.3	12.7
Hernia, intestinal obstruction[6]	12.2	13.6	12.4	11.3	10.6	10.8	10.3	10.3
Cirrhosis of the liver	12.9	14.7	13.9	12.6	7.1	7.3	7.2	7.9
Nephritis	89.0	103.4	99.1	105.1	89.2	96.5	90.8	81.2
Puerperal septicemia	5.7	6.8	7.2	6.3	6.6	5.5	4.6	4.1
Other puerperal causes	7.6	8.1	8.5	9.0	12.5	9.3	8.2	5.8
Congenital malformations and diseases of early infancy	91.8	89.3	88.1	92.1	84.7	74.0	61.0	49.4
Suicide	11.5	16.0	16.0	16.7	10.2	12.1	15.7	14.3
Homicide	2.1	4.5	5.9	7.0	7.1	8.6	9.0	8.3
Automobile accidents[7]	—[3]	—[3]	1.8	5.9	10.4	17.1	24.5	26.8
Automobile—railroad collisions	—[3]	—[3]	—[3]	—[3]	—[3]	1.2	1.5	1.2
Automobile — street car collisions	—[3]	—[3]	—[3]	—[3]	—[3]	0.5	0.4	0.2
Other external causes	79.0	84.0	82.6	70.7	60.9	59.7	54.2	50.1
Unknown and ill-defined diseases	73.8	40.1	23.1	11.4	17.7	17.4	21.0	16.1

1 Less than one-tenth of 1 per 100,000 population.
2 Includes capillary bronchitis.
3 Not separately tabulated.
4 Excludes diseases of coronary arteries.
5 From 1900 to 1920 includes ulcer of the duodenum.
6 From 1900 to 1920 includes adhesions of intestines.
7 Excludes deaths from collision with railroad and street cars.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

ACADEMY OF MEDICINE, 2 E. 103rd St., New York City.

ALLIANCE AGAINST FRAUD, 36 W. 44th Street, New York City.

ALLIED DENTAL COUNCIL, 425 Lafayette St., New York City.

AMERICAN ACADEMY OF APPLIED DENTAL SCIENCE, 587 Fifth Ave., New York City.

AMERICAN COLLEGE OF SURGEONS, 40 E. Erie St., Chicago, Ill.

AMERICAN GYNECOLOGICAL SOCIETY, 1220 Park Ave., New York City.

AMERICAN HEART ASSN., INC., 50 West 50th St., New York City.

AMERICAN INSTITUTE OF HOMEOPATHY, 280 Madison Ave., New York City.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, INC., 708 Medical Arts Building, Rochester, N.Y.

AMERICAN MEDICAL ASSN., 535 N. Dearborn St., Chicago, Ill.

AMERICAN OCCUPATIONAL THERAPY ASSN., 175 Fifth Ave., New York City.

AMERICAN OPHTHALMOLOGICAL SOCIETY, 255 S. 17th St., Philadelphia, Pa.

AMERICAN OSTEOPATHIC ASSN., 430 N. Michigan Ave., Chicago, Ill.

AMERICAN PHYSIOLOGICAL SOCIETY, 303 East Chicago Ave., Chicago, Ill.

AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS, 531 N. Main St., South Bend, Ind.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, 1250 Sixth Ave., New York City.

AMERICAN SOCIETY OF TROPICAL MEDICINE, Ohio State University College of Medicine, Columbus, O.

AMERICAN VETERINARY MEDICAL ASSN., 221 N. La Salle St., Chicago, Ill.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES, 5 S. Wabash Ave., Chicago, Ill.

ASSOCIATION OF MILITARY SURGEONS OF THE U.S., Army Medical Museum, Washington, D.C.

EDWARD L. TRUDEAU FOUNDATION FOR RESEARCH AND TEACHING IN TUBERCULOSIS, Saranac Lake, N.Y.

NATIONAL LEAGUE OF NURSING EDUCATION, 50 West 50th St., New York City.

NATIONAL TUBERCULOSIS ASSN., 50 West 50th St., New York City.

NEW YORK ACADEMY OF SCIENCES, 77th St. and Central Park West, New York City.

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DIVISION XXIV

PHILOSOPHICAL AND SOCIAL SCIENCES

PSYCHOLOGY

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ACTIVITIES

Principal Trends.—Certain new maturity has come to psychology. The science consents to engage frankly in topics of interest which appeal to the layman. At the same time, the science, as typified by the 2,138 members and associates of the American Psychological Association, has maintained a standard of quality comparable with that of the medical science. An outstanding example of the new congeniality for everyday interests has been the acceptance given to F. L. Ruch's new textbook, *Psychology and Life* (Scott, Foresman). This book is based on a questionnaire of the psychological interests of beginning students; the content is organized to develop the topics named. Perhaps you will recall in an introductory course in psychology that the facts and principles learned by you did not seem to fit very well into your own life problems. An awareness of this lack of suitability is finally receiving direct attention.

Association Meetings.—The annual meeting of the American Psychological Association was held at the University of Minnesota, Sept. 1–4, 1937. Prof. E. C. Tolman, president, gave an address on the topic: "Determination of behavior by stimuli—past and to come" (*Psych. Rev.*, Jan., 1938). The Psychological Section of the American Association for the Advancement of Science, at Indianapolis, Dec. 28, conducted a symposium on the subject of "The endocrines as related to behavior." New benefits as well as added precautions in the use of "cortin," extracted from the adrenal gland, were described; excessive cortin is held responsible for such abnormal phenomena as the bearded female.

GENERAL LITERATURE

Asserted Telepathy.—J. B. Rhine has impressed the general reading public so effectively with his claims of proof regarding the occurrence of "extra-sensory perception" that psychologists are constantly pressed for an opinion or explanation of these claims. In the first place, the evidence is based on the per cent of correct guesses of five simple geometrical figures. Thus the evidence is phrased in statistical terms, and it should be the mathematicians who point out the numerous precautions needed in arriving at conclusions based on numerical values. Second, between statistical facts and other known facts, in the fields of the psychology of ideas, the anatomy and physiology of our sense receptors, and the physics of transfer of energy, there is a multiplicity of implication which makes a high demand for additional evidence. Third, most scientists find more fruitful fields of experimental effort. Fourth, would *you* want to feel that any or all of your thoughts were available in some transparent fashion to other persons? The point here is that many persons seem to want telepathy to be true. Even without assuming a prejudice against the work of Rhine, as described in *The New Frontiers of the Mind*

(Farrar and Rinehart), there remains a demand for very complete verification.

Textbooks.—An important major textbook has been written by J. F. Dashiell on *Fundamentals of General Psychology* (Houghton, Mifflin): a discussion of the basic biological and recent neurological experiments are carefully presented in addition to the topics of practical interest. An American translation of W. Stern's *General Psychology* (Macmillan) describes the famous personalistic school which Stern founded. Rev. R. S. Brennan has written a *General Psychology* (Macmillan) which is "an interpretation of the science of mind, based on Thomas Aquinas." A *Manual of Psychological Experiments* (Wiley) is offered by E. G. Boring, H. S. Langfeld, H. P. Weld and others.

Theoretical.—As an introduction to several of the systematic viewpoints of theory, F. S. Keller has composed *The Definition of Psychology* (Appleton). In an historical article on "psychiatry through the ages," S. Stone depicts the practical therapy of the early Greeks which became lost to later centuries; he also stresses the mental and physical epidemics of the Middle Ages during which there was a lack of medical talent (*J. Abn. & Soc. Psych.*, July).

Periodicals.—A new journal, *The Psychological Record*, which has a certain interest in clinical articles is edited by J. R. Kantor. Another new periodical, *Sociometry*, is "a journal of inter-personal relations," G. Murphy editor.

Psychology Films.—Over 200 motion picture films bearing directly on psychological phenomena have been produced in colleges and hospitals during the last ten years. Many of the films are nationally distributed. Some of the pictures listed during 1937, especially in the *Psych. Abstr.*, are as follows: F. N. Stanton, "Factors in visual depth perception"; W. L. Valentine, "Eye-movements in reading"; M. B. McGraw, "Plate glass test (of infant responses)"; N. Bayley & H. C. Jones, "Development of locomotion"; L. F. Beck, "Hypnosis"; E. A. Culler, "Motor conditioning in Dogs"; M. P. Crawford & H. W. Nissen, "Gestures used by chimpanzees in co-operative problem solving"; R. Wildenberg & O. C. Irwin, "Conditioned feeding responses in young infants"; A. Ford, "Industrial motion-analysis"; E. R. Guthrie & G. P. Horton, "Cats in a puzzle-box"; R. W. Gerard, "The nervous system"; A. Gesell, "Life begins"; K. Lewin, "Field forces as impediments to a performance"; C. A. Drake, "Aptitude tests for industrial employees."

PERSONALITY

Diagnosis.—Wide attention has been given to the "Rorschach method" of diagnosing personality in its normal and disordered phases. The test consists of the interpretation by the subject of ink-blot patterns which are seen as various sorts of meaningful figures by different types of persons. At the Harvard Psychological Clinic new tests consisting of sets of meaningful pictures are being constructed on the same idea that persons will differ in their dramatization of the scenes depicted. "Three diagnostic scorings for the Thurstone personality schedule" are found by E. S. Conklin to reveal distinctions between slightly abnormal pattern tendencies, psychotic tendencies and definite schizoid tendencies (*Univ. Indiana Publ.*). A physiological approach is suggested by H. A. Murray in what he calls "visceral manifestations of personality"; he emphasizes particularly the influence of the gastric functions and malignant conditions of organs, also hysterical disturbances, such as muscular contractions (*J. Abn. & Soc. Psych.*, July).

Books.—R. Stagner's *Psychology of Personality* (McGraw-Hill) is largely based on sociological influences, yet at the same time these influences are discussed in terms of the individual rather than of groups; close scrutiny is made of the current trait-testing methods of personality analysis. In contrast, G. W. Allport's book on *Personality* (Holt) is a "psychological interpretation"; the book has drawn on various viewpoints all the way from the philosophical and experimental to the recent "topological"

concept of Gestalt psychology. M. V. Richmond has discussed "the development and 'hygiene'" of *Personality* (Farrar & Rinehart). On the sociological side again, J. S. Plant has presented *Personality and Culture Patterns* (Commonwealth Fund).

SENSATION AND PERCEPTION

General Theory.—Sensations have long been considered as a fundamental topic in psychology. Nowadays, however, it is considered that the purely introspective (Wundtian) viewpoint has been an artificial one. One must include a realization of the "organic nature" of sensations, declares H. Cason (*J. Gen. Psych.*, Apr.). The course of neural sensory activity must not be wholly correlated with consciousness but must be blended with the reflex response aspect of the whole process.

Vision.—Tests of "the integrating power of the eye" for short flashes of light show that the eye can successfully see flashes up to 8×10^{-9} second when repeated rapidly enough to prevent flicker, and given when the eye is rested (T. E. Gilmer, *J. Opt. Soc. Amer.*, Nov.). The "flight of colors" in seen after-images following a very bright light is probably a result of retinal activity because they can be seen in total darkness, whereas milder after-images seen in daylight are probably the result of fatigue; these two types of condition can be made to cancel each other under experimental control, as shown by V. M. Robertson and G. A. Fry (*Amer. J. Psych.*, Apr.). "Visual acuity" can be determined by the new chart designed by C. E. Ferree and G. Rand; the chart involves various sizes of broken circles which give no meaningful clue to the patient (*J. Gen. Psych.*, Nov.). Color vision in infants is shown by C. H. Pearce to be present around the second week following birth; the test consisted of moving colored filters of equal brightness with their surroundings and photographing the occurrence of eye-movements (*J. Exper. Psych.*, March). Showing "binocular interdependence" S. R. Wallace proved that in rivalry there are mutual blends of the conflicting images which indicate not a common center of projection in the brain, but only interaction between different cortical areas (*J. Gen. Psych.*, Nov.). "Distance," when seen with one eye, takes a longer time to estimate than when both eyes are used, but with practice one's monocular ability improves; the convergence movements of the eyes, even involving the closed eye, probably help (M. C. Van Tuyl, *Amer. J. Psych.*, Oct.).

Audition.—Adaptation takes place in our organs of hearing, for as L. Long has shown, tones seem louder than usual when they follow very soft tones and seem softer when followed by very loud tones (*Arch. Psych.*, Apr.). Response to "speech sounds" has been analyzed by N. H. Kelley who found that normal ears can hear vowels more readily than consonants, and pathological ears hear each kind equally well and hear the consonants as well as normal ears (*J. Exper. Psych.*, Sept.). Stopping up the ears, or "occlusion of the meati," causes an increase of bone conduction of sound through the skull, and also the sensitivity for tones of lower pitch is increased (N. H. Kelley and S. N. Reger, *ibid.*, Aug.).

Touch.—The old doctrine of specific energy of nerves, as represented in the receptor organs, still finds support in certain fields. For the sense of touch W. J. Jenkins has shown that "isolated cold spots" respond selectively to cold stimuli and exhibit definite change of sensitivity and cease entirely to respond after four seconds (*Amer. J. Psych.*, Jan.). "The limen of heat" was determined by E. Lowenstein and K. M. Dallenbach to vary between persons and to range from 39 degrees C. to 44.5 degrees; the threshold of heat sensitivity is affected both by room temperature and by skin temperature (*ibid.*, Apr.). The "sensitivity to alternating electrical currents" is mediated by the sense organs of touch, temperature and pain, according to B. H. Gilmer (*ibid.*, July). The cornea of the eye is insensitive to "heat" because heat depends on vascular action and it is found that blood vessels are absent in the center

of the cornea (J. P. Nafe and K. S. Wagoner, *ibid.*, Oct.).

One commercial aspect of the five billion dollar textile industry is the agreeableness of the touch or "feel" of fabrics; so R. Ribin and P. F. Lazersfeld have studied the "tactile-kinaesthetic" sensations of cloth; they find that rayons are highly favored, but that some extreme contrasts of surface and depth in fabrics is also very appealing (*J. Appl. Psych.*, Apr.).

Taste and Smell.—The taste of salt varies not only in intensity, but also in a spatial-temporal manner; with stronger concentrations there is a more rapid onset of sensation and a greater pervasiveness over the tongue (A. H. Holway and L. M. Hurvich, *Amer. J. Psych.*, Jan.). "Adaptation" to sweet, salt, sour and bitter tastes has been tried by K. M. Dallenbach and others. They find that all four tastes, when carefully applied to limited regions of the tongue, eventually disappear. This refutes some crude experiments of 20 years ago which claimed that there was no adaptation (*ibid.*, July). "Smell" causes one's reaction-times to be facilitated or retarded; there are differences between individuals (H. R. De Silva and B. L. Golub, *J. Gen. Psych.*, Jan.). An interesting set of new olfactory qualities, not available in nature, are being produced by chemical syntheses, such as a lily-of-the-valley perfume (J. S. Davis, *Du Pont Mag.*, Oct.). C. A. Elsberg reports that when odorous gases are injected under controlled pressure, volume and concentration into the nostrils that reliable standards of human judgment can be obtained and can be used as the basis for diagnosing certain kinds of disorder in which olfactory sensitivity may have been affected (*Arch. Neurol. & Psychiat.*, Mar.).

INTELLIGENCE

Tests.—The famous Stanford revision of the Binet-Simon test of intelligence has been again revised under the direction of L. M. Terman and M. Merrill. The revision is described in their book, *Measuring Intelligence* (Houghton, Mifflin); the age-scale is retained; scales for additional ages have been prepared, the ages 11 and 13 are now cared for. Very complete information about *Aptitude and Aptitude Testing* (Harpers) is furnished by W. V. Bingham; good techniques of administering the tests are described; in addition to the exploration of the person's vocational possibilities there is also a discussion of "orientation within the field of work."

Individual Differences.—The concept of individual differences has been one of psychology's greatest contributions to knowledge. The concept was largely the American product of J. McK. Cattell, inspired by England's F. Galton. Most colleges today offer special courses under this title. As the result of such a course at Barnard College, A. Anastasi has published her lectures under the title *Differential Psychology* (Macmillan); she discusses individual and group differences in behavior as seen in education and other social situations.

LEARNING AND THINKING

Learning Concepts.—Many varieties of learning processes have been studied—conditioned responses, paired associates, selection, developing perceptions, redintegration, multiple choice, serial and logical associates, and the establishment of skill. In all of these forms there is a general coordinating process between sensory and motor elements, with "forgetting" corresponding to disorganization (H. Cason, *Psych. Rev.*, Jan.). Negroes learn more quickly than white persons to make certain estimates of sensory experiences, such as the "discrimination of visual magnitude." This result furnishes another test of the adequacy of a racial group to make an adaptation; the test is applicable to the problem of racial mobility (O. W. Eagleson, *J. Psych.*, Mar.). H. B. Carlson has shown that by "factor analysis of memory ability" one can divide the process into "rote" and "logical" forms (*J. Exper. Psych.*, Nov.). In the "transfer" of learning the problem of identical elements has been given a physiological significance by G. L. Freeman who says that there is more likely an iden-

tity of patterns of integration based on similar neural elements than of identical content; he cites Lashley's experiments on rats as an example (*ibid*). Training in art does not make the learning of "mirror drawing" any easier (J. E. Moore, *ibid.*).

Reasoning Experiments.—In reviewing the "experimental studies of thought and reasoning," E. J. Gibson and H. R. McGarvey point out that, except for the method of introspection, there is a lack of systematic approach by use of other experimental methods in the study of these problems; the nearest efforts are in the direction of questionnaire and statistical studies (*Psych. Bull.*, June). In solving puzzles it is found by L. W. Crafts and H. M. Kohler that the "whole and part methods" of attack produce a difference; the part method proved better for patterned problems such as a jigsaw puzzle (*Amer. J. Psych.*, Oct).

Mental Work.—A. G. Bills has continued his study of "facilitation and inhibition in mental work" and suggests that a classification of different kinds of mental tasks would assist in finding what types of work were affected by the fatigue transferred from other types (*Psych. Bull.*, May).

FEELING AND EMOTION

Aesthetic Feelings.—The affective value of sounds in poetry depends on the poetic images aroused, the appreciation of the sounds themselves and the "marriage of sound and meanings," according to K. Hevner (*Amer. J. Psych.*, July). In attempting to "recall pleasant and unpleasant words," P. T. Young finds that the pleasant meaning of a word, such as "love" may not be accompanied by a pleasant attitude toward this supposedly pleasant meaning, nor perhaps for the sound of the word; therefore an exact criterion must be established in judging the affective value of a verbal stimulus; about 55 per cent of the recalled words by a group of students brought revival of pleasant feelings (*ibid.*, Oct.). Do you like your first name? W. E. Walton, studying "affective value of first names," found there is a fair agreement between sexes on the name preferences; Robert and Jean received preference by most of the judges (*J. Appl. Psych.*, Aug.). Two hundred students were given individual tests of the like or dislike for odors; then, other persons were subjected to "a group experiment upon the affective reaction to odors" and a demonstration was obtained of distinct social influences, for example, a large number of the group judged the odor of (odorless) distilled water to be definitely unpleasant (*Amer. J. Psych.*, Apr.). E. A. Davis reports that in 20,000 remarks by 400 children there was "a tendency to avoid words with unpleasant connotation" (*ibid.*).

Emotion.—W. A. Hunt insists that certain introspective terms for emotional qualities, such as "brightness" for the pleasant emotions, are consistent and justified (*ibid.*, Oct.). "Startle" responses have come to represent a distinct type of behavior in the psychologist's standards. In identical twins it was found by W. A. Hunt and F. M. Clarke that the startle pattern is different in each twin; it seems to be more pronounced in the children who have a mixed dominance in their handedness (*J. Exper. Psych.*, Sept.).

PHYSIOLOGICAL

Nerve Chemistry.—An outstanding trend in physiological psychology is noted in the proposal of "chemical mediation" between nerves, especially at the synapse. The most impressive evidence of such influence between nerves is given by W. B. Cannon and A. Rosenblueth in their book, *Autonomic Neuro-Effector Systems* (Macmillan). There is evidence, for example, that even when the adrenal glands are removed from the body the stimulation of the nerves which were attached to the glands still produce the same effect on the rest of the system, as increasing heartbeat. Thus it appears that the nerves themselves cause the liberation of substances into the blood stream which bring about activity in the appropriate muscles.

Brain Waves.—The phenomenon of rapid electrical oscillations (14

per second) which can be recorded from the human brain, or even through the skull, has continued to dominate the interest of many scientists. H. H. Jasper has summarized the facts about this phenomenon in an article on "electrical signs of cortical activity" (*Psych. Bull.*, July), and concludes that these rhythmic discharges serve as "pacemakers" for integrating the activity of widely separated cortical areas. During sleep the brain waves differ noticeably.

Brain Structure.—"The brain considered as an organ" is, according to J. W. Papez, composed of several levels of muscle-connecting systems which allow for various types of response such as balancing, emotional response, skilled actions and speech. The sensory nerve tracts function to externalize activities (*Amer. J. Psych.*, Apr.). "The present status of the frontal lobe" of the brain, according to theories about it, is regarded by F. A. Mettler to be dependent on greater knowledge of the lower neural levels; there are many segments pyramided before the cerebrum is reached (*J. Gen. Psych.*, Oct.).

Skin Reflexes.—Unpleasant stimuli tend to give greater "skin resistance" than pleasant stimuli of equal qualitative impressiveness; thus the use of the psychogalvanometer would be better for disagreeable situations (N. W. Shock and C. H. Coombs, *Amer. J. Psych.*, Oct.)

MOTOR PHENOMENA

Mutism.—The loss of one's voice can be overcome by three methods: (1) a buccal whisper, by which air is compressed in the mouth, and forcibly emitted as a series of consonants only; (2) the use of an artificial larynx by which sound and air pressure are led into a corner of the mouth by a tube and then the pronunciation is effected in the mouth and chest; (3) a new method, called "oesophageal speech" which has been recorded by R. H. Stetson (*Arch. Neer. Phon. Exper.*) and by which the patient takes a quantity of air into the upper part of the oesophagus and then forces it through the pharyngo-oesophageal slit; frequent renewals of air are necessary; few patients acquire this method spontaneously, but it can be taught and it is more convenient and less unsightly than is the use of the artificial larynx, though the latter has been employed even for conversing over the telephone.

Stuttering.—For "minimizing stuttering" C. Van Riper shows that various devices are used by the person: some are mere dodges, such as avoiding awkward words, or coughing, or of speaking in a monotone; the person may make a positive attempt to overcome the interference such as changing the respiratory rate, assume a general relaxation or pitch the voice differently; many of the latter devices are themselves handicaps; one of the important cures is to build up a definite right and left cerebral dominance (*J. Abn. & Soc. Psych.*, July).

Muscular Traits.—In the field of total behavior it has been shown by G. L. Freeman that "anticipatory tensions" can be helpful if they involve muscles most closely agreeing with the kind of work to be performed (*J. Exper. Psych.*, Nov.). A lengthy bibliography on "conditioned responses" has been compiled by G. H. S. Razran (*Psych. Bull.*, Apr.). In the dizziness following rotation the nystagmus of the eyes is prolonged if the eves remain closed after the rotation has ceased (W. O. Fenn and J. B. Hursh, *Amer. J. Physiol.*, Jan.). Comparing "sleep and hypnosis" in their physiological effects, A. Jenness and C. L. Wible find that the heart beat slows up in sleep, but not during hypnosis, also the respiration becomes periodic in sleep, but remains quite steady in hypnosis (*J. Gen. Psych.*, Jan.). Adults have certain "characteristics of gait" which can be described in spatio-temporal terms or in the relative changes of bodily parts: these characteristics afford an index of measurement for the study of mental processes, such as defective mentality, or they show the influence of early developmental influences (A. D. Glan-

ville and G. Kreezer, *J. Exper. Psych.*, Sept.).

ANIMALS

Apes.—Yale's famous program of research upon the ape family is being actively continued. J. T. Cowles offered "food tokens as incentives for learning by chimpanzees." The chimpanzees would persevere at their tasks when they had to earn several tokens before they could purchase food. Nevertheless the greater immediacy of food, or quicker purchasing power of the tokens, served as a proportionately greater drive for successful completion of the imposed tasks, such as working out the proper combination of levers to open a cage (*Comp. Psych. Monog.*, Sept.).

Maternal Behavior.—The "maternal behavior of mice" is not affected by the removal of the pituitary gland; this so-called instinctive type of behavior functions independently of the influence of hormonic glandular affects (C. P. Leblond and W. O. Nelson, *Amer. J. Physiol.*, Sept.).

Learning.—When rats learn "string-pulling" as a means of obtaining rewards, such as food or escape, it is believed by E C. Tolman that they are not being conditioned to a single response, but must be prepared to deal with intervening variable factors before success is acquired; thus, in Tolman's phrasing, the expectation of a "sign-gestalt" is the real action that is learned (*Psych. Rev.*, May). Due to the fact that animals learn to distinguish a stimulus larger than standard more quickly than one smaller, it is believed by K. W. Spence that a somewhat configurational type of explanation needs to be used for the discrimination of variations within "a single dimension" rather than to use a psychophysical explanation (*ibid.*, Sept.).

Genetic.—Z. Y. Kuo and L. Carmichael offer important advice on "a technique for motion-picture recording of the development of behavior in a chick embryo" by which an analysis can be made of the origins of action, *e.g.*, of the pulse beats which jar the head and apparently initiate the head movements of pecking (*J. Psych.*, July). The "seventeen year locusts," says H. A. Allard, emerge from their holes and move "unerringly" toward the nearest tree; they converge from all sides toward the tree; before the emerging nymphs acquire a rigid exterior they all ascend to some distance above the ground; some errors in their behavior do occur, for a number of nymphs do not come to rest with their heads uppermost and consequently their wings become stiffened at some improper position, and the insects cannot fulfill the "plan" for which they have been so long in preparation (*Amer. Naturalist*, Dec.). *Snakes and Their Ways* (Harper) have been described by C. H. Curran and C. Kauffeld.

ABNORMAL

American Psychiatric Society.—The ninety-third annual meeting of the American Psychiatric Society, May 10–14, devoted much attention to the problem of epilepsy; there is a feeling that the contributions of chemistry (especially of gland chemistry) and of brain physiology have brought medicine to the threshold of understanding the various convulsive types of disturbance (*Ment Hyg.*, July).

Books.—T. Burrow has written a "biological interpretation" of *Human Conflict* (Macmillan). Interesting *Historical Notes on Psychiatry* (Blakiston) have been furnished by J. R. Whitewell. V. E. Fisher discusses the psychology of nervousness in his book, *Auto-Correctivism* (Caxton); the thesis is that neurotic symptoms are themselves a type of behavior designed to attempt a maintenance of equilibration in our conduct when we are acting unwholesomely. H. C. Brown described desirable improvements for psychiatric institutions in his book, *A Mind Mislaid* (Dutton). L. E. Hinsie gives a general view of *Concepts and Problems of Psychotherapy* (Columbia Univ. Press). For students of medicine and nursing E. M. Westburgh offers an *Introduction to Clinical Psychology* (Blakiston).

Hypnosis.—How much "genuineness" is there in the blindness and

anaesthesia of hypnotized subjects? F. A. Pattie concludes from experimental demonstrations that there is a certain degree of reality because the subjects are sometimes confused in their identification of the insensible member, as, for example, when their hands are crossed and they still report numbness in the particular fingers they had been told were so (*Amer. J. Psych.*, July).

New Concept.—A novel proposal, called "psychoallergy," by W. Marshall (*Amer. J. Clin. Med.*), contains the idea that certain irritative mental factors such as annoyances or worry produce a psychoallergic state which in turn produces psychotic conditions: the condition involves the presence of substantial changes as much as if actual poisons were present in one's system. A survey of *The Mentally Ill in America* has been projected by A. Deutsch (Doubleday, Doran).

THE CHILD

The Neonate.—"The behavior of the newborn infant" has received much attention because of the significance which the facts of this stage of life possess regarding the distinction between heredity and environment and their influence on growth. K. C. Pratt reviews the literature; the classifications of the first hours following birth are often stated in terms of isolated details without envisaging the organization of activity; the main point of interpretation has concerned the degree of specificity or generalization that is shown; some authors assert the dominance of one type, others assume the alternative, but lately a compromise view (and one confirmed by Gesell's motion picture work) is that there is an initial isolation of various sets of muscle responses along with some diffuse waves of activity, then a gradually developing co-ordination from the head and shoulder region extending gradually toward the lower limbs (*Psych. Rev.*, Nov.). Another contribution to the distinctions between heredity and environment is given in the book, *Twins* (Univ. of Chicago Press), by H. H. Newman, F. N. Freeman and K. J. Holzinger. Continuing his program of study on babies, A. Gesell with F. L. Ilg, describes *The Feeding Behavior of Infants* (Lippincott).

Problems.—A concise guide of the common problems of child development is found in E. Wrexburg and H. E. Fritsch's book, *Our Children in a Changing World* (Macmillan). The medical specialists supply a challenge and a plea to the psychologists in B. Crother's book, *A Pediatrician in Search of Mental Hygiene* (Commonwealth Fund). R. M. Gartland has described the *Psychiatric Social Service in a Child's Hospital* (Univ. of Chicago Press). *Superior Children* (Norton) are discussed by J. E. Bentley. A new *Child Psychology* (Houghton, Mifflin) is offered by F. D. Brooks.

ADOLESCENCE

Conflicts.—It is no news that adolescents come into conflict with their parents; a thorough analysis of the causes of these difficulties has been sought by W. L. Block who finds that apparently similar problems arise from very different causes; for example, while 69 per cent of the sixth grade children complain that the parents disapprove of their taste in clothing, yet the basis of conflict ranges from a state of general tension in the family to a question of specific tastes (*J. Abn. & Soc. Psych.*, July). Concerning "crime and adolescence," B. Karpman gives the assurance that considerable social trial-and-error, such as youthful gangs, is a normal phase of the growth of young people; the serious aspects arise from indirect sources such as a feeling of insecurity arising from the conduct of parents in either superior or inferior homes (*Ment. Hyg.*, July).

SOCIAL

Changing Attitudes.—American standards of "co-operative and competitive behavior" have been interpreted by M. A. May and L. Doob (*Soc. Sci. Res. Council*) to indicate that "in a rapidly changing culture, and especially in one that is moving from

a competitive to a co-operative economy, the rate of change is a function of the speed with which the resocialization of the adult generation and the new socialization of the younger generation can take place." Social research needs to be oriented toward lines on which students can collaborate; the day of "rugged" individualism in social psychology studies has passed its usefulness. Therefore, says G. B. Watson, we should outline a program such as might include the following issues: public opinion, group thinking, group planning, social forces and leadership. Our leaders in social innovation represent something more than persons of high I.Q. "Leaders may average a centimeter taller and a kilogram heavier, but why Napoleon or Masaryk?" So many of our fundamental beliefs are the result of social and group experience that it has become necessary to devise accurate means of determining what different groups of persons believe. D. Katz has carefully reviewed the phases of "attitude measurement as a method on social psychology" (*Soc. Forces,* May), and has indicated that group preferences for personal values, *e.g.,* favorite public personages, are not logically consistent with their preferences or principles of politics.

Marriage.—A helpful article on "marital counseling" was presented by P. Popenoe who describes several types of unresponsiveness in marital partners; he points out that mere states of fatigue or strain may cause temporary apathy, but the occurrence of such a feeling arouses the fear of a chronic state, and thus a continued frigidity may develop; the main solution of the difficulty is attained through patience and genuine sympathy (*West. J. Surg., Obstet. & Gyn.,* Jan.).

Primitive Man.—S. D. Porteus of Hawaii has accumulated an extensive description of *Primitive Environment and Intelligence* (Macmillan); the book deals with the Bushmen of Australia, with Malaya Negritos, the Ainu of Japan, and the sea gypsies of Borneo; much of man's culture depends on the demands of his surroundings. *Primitive Behavior* (McGraw-Hill) is used by W. I. Thomas as the basis for his treatment of social psychology; many hundred excerpts from the literature on primitive races are included in the book along with accompanying interpretations.

General.—G. Murphy's *Experimental Social Psychology* (Harper) which is over 1,000 pages summarizes a large body of research material; in the revised edition there is more evaluation of the data cited. E. P. Schmidt has edited a book on *Man and Society* (Prentice-Hall) which includes special chapters on "modern criminology," "human geography," and "social valuation." In reviewing the "social psychology of George Mead" the claim is made by E. Faris that Mead preserves the concept of responsibility and spontaneity which are lost in more mechanistic accounts of man (*Amer. J. Sociol.,* Nov.).

VOCATIONAL

Youth.—A series of six bulletins, called *Youth,* have been made available by the Supt. of Documents at Washington, D.C. The series concerns the question, "What happens when youths leave school and cannot finds jobs?" E. G. Williamson has prepared a set of recommendations for vocational counseling based on his experience in college work; his book is called *Students and Occupations* (Holt).

Employment.—In H. W. Hepner's book, *Finding Yourself in Your Work* (Appleton), the endeavor is made to show how much self-guidance a person can accomplish by himself and how much expert counseling he should seek elsewhere; good advice is offered on the preparation of adequate knowledge and personality in the pre-vocational period, especially in school and college. To determine the right employee for a specific job is the aim of D. A. Laird's *Psychology of Selecting Employees,* new edition (McGraw-Hill); the relative value of interviews, letters, measurement of traits and tests is discussed as well as the fallacies of certain hasty forms of judgment.

APPLIED

Radio.—Concerning the attention effect from poster, radio and radio-poster advertising, F. R. Elliott found that radio brought more attention than did posters, but the two combined brought the greatest increase in attention (*J. Appl. Psych.*, Aug.). A survey of mothers' opinions about children's radio programs indicated that many groups of mothers meet to discuss the radio situation; mostly the mothers are in search of (solutions to) individual problems; they are inclined to disapprove of over-emotional themes in the children's entertainment (*ibid.*, June). In a test of the children's own interests to radio programs it was found that either in questioning the youngsters or in observing their emotional responses to presentations that they exhibited a great deal of inconsistency and changeableness (*ibid.*, Aug.).

Play.—"Golf" has received a statistical study by H. F. Adams who shows that each individual has his own type of play, and in this type he can become consistent in his performance; perfection in driving ability was established with a margin of five degrees on both sides of the cup in the intended line of flight of the ball (*ibid.*). A new edition of G. W. Crane's *Psychology Applied* (Northwestern Univ. Press) includes some new personality tests, also considerations of music, art, public speaking and child study.

EDUCATIONAL PSYCHOLOGY

Cases.—A new approach to the understanding of educational problems is given in S. L. Pressey and J. E. Janney, *Case Book in Research in Educational Psychology* (Harper) which is a collection of studies on student incentive, health, social adjustment and study habits. In the *Social Psychology of Education* (McGraw-Hill), A. O. Bowden and I. R. Melbo discuss teacher-pupil relationships; special attention is given to the techniques of attitude formation.

Texts.—There are three helpful textbooks: *Educational Psychology* (Prentice-Hall); *Introduction to Educational Psychology* (Houghton, Mifflin) by W. C. Trow; and *Principles of Educational Psychology* (Roland) by W. D. Commins.

PHILOSOPHY

By Chester Townsend Ruddick

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GENERAL

The present period in Philosophy is certainly not a stagnant one, though there might be some question whether its activity is not directed more toward the practical aspects of the subject and the possibilities of application, and less toward the theoretical discipline itself. One has only to note, for instance, the phenomenal rise of Social Philosophy, and the steadily increasing interest in Philosophy of Science. The year 1937 seemed to show a greater concern with problems of Ethics, too, and with the general problem of Religion as well. Logical Positivism continues to hold the spotlight as the novelty on the philosophic scene, the attention it attracts becoming more critical than in other years.

Perhaps a first and a fair indication of current tendencies in philosophic interest may be obtained from a consideration of the principal subjects of discussion at meetings of the various associations.

MEETINGS

The Ninth International Congress of Philosophy dedicated to Descartes in commemoration of the 300th anniversary of the *Discourse on Method*, was held in Paris, Aug. 1–6, 1937. Among the Americans participating actively were S. Brown, W. P. Montague and P. Bernays. A report of the Congress by G. Boas appears in

the *Journal of Philosophy* (XXXIV, 21).

The 36th annual meeting of the Eastern Division of the American Philosophical Association was held at Harvard University, Dec. 28–30, 1936. The Philosophy of Whitehead was one of the principal topics of discussion, other symposia centering about "Cognition and Value," "Philosophical Problems in the Social Sciences" and "American Philosophy since 1900." One session was held jointly with the Association for Symbolic Logic, which met at the same time and place. This second annual meeting of the Association for Symbolic Logic is reported by S. K. Langer (*J. of Sym. Log.*, II 1.) The Pacific Division met for the 13th time at Mills College, California, Dec. 28–30, 1936, for a varied program. The Western Division held its 38th annual meeting at Knox College, Galesburg, Ill., April 22–24, 1937. The program included a symposium on "Empiricism and the Language of Science," led by R. Carnap, and one on "Value and Existence" by D. H. Parker.

The Southern Society for Philosophy and Psychology, which held its 32nd annual meeting at Columbia, South Carolina, March 26–27, 1937, included 16 papers in Philosophy on its program, about one third of them in the field of Medieval thought. A brief report of the meeting is given by K. K. Berry (*J. Phil.*, XXXIV, 19), who remarks on "America's alleged rediscovery of and return to scholasticism."

The twelfth annual meeting of the American Catholic Philosophical Association, held at Chicago, Dec. 29–30, 1936, centered about the topic, "Christian Philosophy and the Social Sciences." The proceedings of the meeting, bearing that title, are reviewed in *The Journal of Philosophy* (XXXIV, 14).

On May 22–23rd, 1937, there was held at the New School for Social Research, New York City, a "Conference on Methods in Philosophy and the Sciences," the purpose of which was to face and attempt to counteract an apparent tendency toward authoritarianism in these fields, according to the published report (*J. Phil.*, XXXIV, 20). The secretary of the Conference, G. Kennedy, Amherst College, announced a second conference held in November.

TEXTS

New textbook material is related, for the most part, to the subjects which are more commonly treated in elementary fashion, as introductory to the general field of Philosophy. Of the six books to be noticed, one falls under the category of "Introduction," two are in Logic, and two in Ethics. The sixth is an important exception, since it is the first text to be offered as such to students of Philosophy of Science.

W. S. McNutt provides *The Story of Philosophy, Told in Problem Study* (The Palmer Co., Boston), which attempts to introduce the student, and perhaps the layman, to Philosophy, by exhibiting the progress from first principles to results in historic philosophic thought. The two texts in Logic are both of the sort which would approach the problem from the practical side. C. H. Patterson's *Principles of Correct Thinking* (Longmans), which had appeared before in mimeographed form, bases its argument on illustrations of the methods of the sciences. D. S. Evans and W. S. Gamertsfelder in *Logic: Theoretical and Applied* (Doubleday, Doran), attempt to relate logic to the problems of everyday life.

The two texts for Ethics are quite different from one another, and each is unusual in a way. *The Ifs and Oughts of Ethics, A Preface to Moral Philosophy* (Wm. B. Erdmans, Grand Rapids) by C. De Boer, recognizes the first interest which the student has in the subject matter, in the precepts themselves. E. E. Ericksen's *Social Ethics, an Introduction to Moral Problems* (Doubleday, Doran) tries to keep the subject elementary by developing it in the concrete, not in terms of abstract theory. This is accomplished by dealing with moral problems in relation to the "moral

community" and making the end of a study of Ethics the betterment of society.

The Philosophy of Science, since it has begun to be taught in recent years in undergraduate institutions, has suffered from a lack of textbook material. This has perhaps been felt more strongly by instructors than by students, if the writer's view is correct, that what has been needed is not so much material for students to read, since there are always the sources, but expressions of viewpoint with regard to the question of the proper problems for Philosophy of Science, which might help to define the field more clearly, and divorce its treatment from some particular metaphysical system, to which it all too often becomes merely a corollary. A first step in this direction has been taken by A. C. Benjamin, with *An Introduction to the Philosophy of Science* (Macmillan). Whether or not anyone finds the book a good one, it must still be an important one, as an opening gun in the attempt to make clear just what Philosophy of Science is.

Just as important for the teaching of Philosophy as its text books are the many volumes of source material which continue to appear. Perhaps the most important of this year's productions is an inexpensive complete edition, in two volumes, of *The Dialogues of Plato* (Random House). This is a reprint of the Jowett translation, and includes Jowett's marginal notes, but not his analyses. The whole is preceded by an introduction by R. Demos. Another edition, using the same translation, but not complete, is published under the head, *The Works of Plato* (Tudor).

A new volume of the Loeb Classical Library is *Aristotle-Problems* (Harvard University Press), with a translation by W. S. Hett. Further additions have also been made to the edition of the works of Plotinus in this library, bringing the number of volumes completed to seven.

Three volumes have appeared in a new series of *Philosophy Source Books* (Appleton-Century), under the general editorship of S. P. Lamprecht. Two of them are in the currently popular field of Political Philosophy: *John Locke—Treatise of Civil Government, Letter Concerning Toleration,* edited by C. L. Sherman, and *Benedict de Spinoza—Writings on Political Philosophy,* edited by A. G. A. Balz. The third is a translation, by G. G. Leckie, of *St. Thomas Aquinas—Concerning Being and Essence,* another translation of which has appeared within the last few years. One volume has been added to another series recently begun. This is *Bacon-Hobbes-Locke: Selected Writings* (Doubleday-Doran), edited by G. Kennedy. Contained in it are selections from Bacon's *The Great Instauration* and *Novum Organum,* Hobbes' *Leviathan,* and Locke's *An Essay Concerning Human Understanding,* sources which are supposed to "lay the foundations of modern empiricism." The publication, in a limited edition, of Hume's *Essay on Suicide* (Antioch Press), in the text of the first edition, might also be noticed here, as well as Agrippa of Nettesheim's *Philosophy of Natural Magic.*

HISTORY OF PHILOSOPHY

Scholarly research seems to have produced no general histories of Philosophy in 1937, nor even historical accounts of limited periods. In fact there are very few books which find their problems in the understanding of the older philosophies. One which might be mentioned is G. E. Mueller's *What Plato Thinks* (Open Court), which is an attempt at interpretation in that it treats Plato as a contemporary and considers the ways in which he might now deal with basic philosophical problems.

As is usually the case, the bulk of historical research is represented by brief discussions of certain aspects of some classic philosophical system. Among them are to be noted the following: R. Demos, "Plato's Idea of the Good" (*Philosophical Review,* XLVI, 3); H. Hausheer, "St. Augustine's Conception of Time" (*Phil. Rev.,* XLVI, 5); V. C. Aldrich, "Descartes' Method of

Doubt" (*Phil. of Science,* IV, 4); A. G. A. Balz, "Cartesian Refutations of Spinoza, I" (*Phil. Rev.,* XLVI, 5), which reviews certain criticisms of Spinoza's doctrine by Cardinal Gerdil (1760) and François Lamy (about 1700), and is to be followed by other studies of a similar nature; J. Buchler, "Act and Object in Locke" (*Phil. Rev.,* XLVI, 5) in which a "minute" but "significant" question is discussed —the proper statement of the issue between two propositions: (A) a perception is distinct from, and (B) is identical with, an idea; J. T. Baker, "Henry More and Kant" (*Phil. Rev.,* XLVI, 3), a note on the second argument on space in The Transcendental Aesthetic; C. B. Garnett, Jr., "Kant's Theory of intuitus intellectualis in the Inaugural Dissertation of 1770" (*Phil. Rev.,* XLVI, 4); J. J. Toohey, "Kant on the Propositions of Pure Mathematics" (*New Scholasticism,* XI, 2).

M. Bishop's biographical work, *Pascal, the Life of Genius* (Reynal & Hitchcock) may be of some interest to philosophers. Historians of Philosophy might be concerned about G. Boas' article, "What is a Problem?" (*Journal of Philosophy,* XXXIV, 8), in which it is remarked: "If we write the history of Philosophy entirely in terms of its problems, we shall never know why there has been any history whatsoever, for the problems of Philosophy do not reveal the causes of philosophic change."

METAPHYSICS AND EPISTEMOLOGY

Contributions to what are traditionally considered the central problems of Philosophy are fairly numerous, both in systematic works and briefer discussions. Among the important books are: W. C. Swabey, *Being and Being Known: An Introduction to Epistemology and Metaphysics* (Dial Pr.); D. W. Gotshalk, *Structure and Reality, a Study of First Principles* (Dial Pr.); A. C. Garnett, *Reality and Value* (Yale Univ. Pr.); K. Schmidt, *The Creative I and the Divine: Introduction to a Systematic Philosophy* (Dial Pr.), which is discussed by A. E. Murphy in "Karl Schmidt's 'Generating Problems' and Systematic Philosophy" (*J. Phil.,* XXXIV, 20); F. Varvello, *Metaphysics* (Univ. of San Francisco Pr.); C. Hartshorse, *Beyond Humanism: Essays in the New Philosophy of Nature* (Willet, Clark); and J. B. Pratt, *Personal Realism* (Macmillan).

The last of these works is subject for discussion in A. E. Murphy's article, "The Fruits of Critical Realism" (*J. Phil.,* XXXIV, 11), which finds the "rearguing of the old issues in terms of the traditional alignments of realism and its alternatives" inconclusive and futile, and so moves the adjournment of the whole enterprise. R. W. Sellars supports his sort of realism against the encroachments of Logical Positivism in "Critical Realism and the Independence of the Object" (*J. Phil.* XXXIV, 20). In "Accidents Will Happen" (*J. Phil.,* XXXIV, 5) J. W. Miller insists that the accidental is necessary, and that a recognition of this would enable idealists to meet some important objections to their doctrines. The perennial controversy between realist and idealist tendencies seems to have taken a recess, both parties having retired to bolster up their positions.

Presidential addresses to two of the three divisions of the American Philosophical Association are metaphysical in nature. E. S. Brightman, in "An Empirical Approach to God" (*Phil. Rev.,* XLVI, 2), addressed to the Eastern Division, develops the notion of God as an hypothesis for the interpretation of facts. A better world, as an ideal which orders man's life and the world, but never "loses itself in actuality," is recognized by H. G. Townsend in his address to the Pacific Division: "On the Possibility of a Better World" (*Phil. Rev.,* XLVI, 2).

E. W. Strong, in "Metaphors and Metaphysics" (*International Journal of Ethics,* XLVII, 4), argues that analogical metaphysics is not to be ignored. William James' theory of concatenation, as a path between monism and monadism, and as the only form of pluralism tenable, is analyzed, and evidence for it examined, by W. Savery in an article,

"Concatenism" (*J. Phil.*, XXXIV, 13). Concatenism is considered here to be the most important discovery of Philosophy in 50 years. Other articles in Metaphysics are D. W. Gotshalk's "The Metaphysical Situation" (*Phil. Rev.*, XLVI, 5) and C. V. Tower's "Neutralism, Immediacy and 'The Irrational'" (*J. Phil.*, XXXIV, 2).

An article in Epistemology by L. F. Kinney, "Hypotheses and Dialectic" (*J. Phil.*, XXXIV, 13) makes use of an interpretation of Plato's Parmenides to urge upon Philosophy and Science alike the "rational intuition" which comes with the development of a dialectic.

A whole set of articles derives from the symposium on "The Philosophy of Whitehead" at the 1936 meeting of the Eastern Division of the American Philosophical Association. These are "Organic Categories in Whitehead" by G. Vlastos (*J. Phil.*, XXXIV, 10), "Negative Prehensions" by A. Ushenko (*J. Phil.*, XXXIV, 10) and "Whitehead's Philosophy" by J. Dewey (*Phil. Rev.*, XLVI, 2). Mr. Whitehead's remarks at the conclusion of the symposium have also been published (*Phil. Rev.*, XLVI, 2).

Also in this field is a collection of 37 essays and addresses by F. J. E. Woodbridge, under the title *Nature and Mind* (Columbia Univ. Press), a volume presented to the author on the occasion of his seventieth birthday.

There still remain to be taken into account a number of endeavors to get at the heart of the philosophic problem, but since they are so much at variance with the traditional ways of dealing with these matters, they may be treated all together under a separate heading.

LOGICAL POSITIVISM

This comparatively new movement, which has gained a strong foothold in America in recent years, continues to be the subject of much discussion. Evidence of its recognition by academic circles is presented by the fact that one of its leaders, R. Carnap, who has been responsible for much of its development in Europe, is, with two likewise imported assistants, establishing in a large university a research seminar in Logic. It is interesting to note the appearance of a number of articles, on American origin, which subject doctrines of the school to critical analysis.

A translation of one of Carnap's fundamental works, *The Logical Syntax of Language*, has recently appeared in the *International Library of Philosophy, Psychology and Scientific Method* (Harcourt, Brace), with some new material which was not in the original. In a lengthy article, "Testability and Meaning" (*Philosophy of Science*, III, 4; IV, 1), this writer attempts to bolster up the foundations of his doctrine with "more exact definitions and formulations," without trying to "offer definitive solutions of problems treated." O. Helmer, one of Carnap's assistants, takes another step in this direction in his attempt to show that "undecidable sentences" are compatible with the positivist outlook. "The Significance of Undecidable Sentences" (*J. Phil.*, XXXIV, 18).

Still another European Positivist, O. Neurath, presents to philosophers in this country a program or project, which would be significant if the tenets of Positivism were accepted: "Unified Science and its Encyclopedia" (*Phil. of Science*, IV, 2). The project is accepted and, according to report (*Phil. of Science*, IV, 4), the *International Encyclopedia of Unified Science* is under way, with O. Neurath as Editor, and R. Carnap and C. W. Morris as Associate Editors. Its purpose is to bring together material pertaining to the scientific enterprise as a whole, stressing the logical structure of the special sciences considered in relation to one another. Plans have been made for two introductory volumes, with the title, *Foundations of the Unity of Science*.

W. K. Werkmeister, in "Seven Theses of Logical Positivism Examined" (*Phil. Rev.*, XLVI, 3, 4), finds a number of points to criticize. An accusation that the Positivists show a lack of historical knowledge

is made by M. Taube in "Positivism, Science and History" (*J. Phil.*, XXXIV, 8). C. W. Morris examines the doctrine in *Logical Positivism, Pragmatism and Scientific Empiricism* (Hermann & Cie., Paris). E. O. Sisson in "Symbolic Logic and 'Embedding Language'" (*Phil. of Science*, IV, 4) discusses certain problems of interest to the logician and logical positivist alike.

PHILOSOPHY OF SCIENCE

Mention has already been made of the importance for this field of research of the publication of a text book which attempts to define the field and outline its problems: *An Introduction to the Philosophy of Science* (Macmillan), by A. C. Benjamin. The same author, in *The Logical Structure of Science* (Barnes & Noble), develops a logic science grounded in the "operational" point of view, and calls his doctrine "critical positivism." Other books relevant to Philosophy of Science are H. H. Dubs, *Rational Induction, an Analysis of the Methods of Science and Philosophy* (Univ. of Chicago Press) which might be considered an epistemological treatise, and A. P. Ushenko, *The Philosophy of Relativity* (Macmillan), which is an attempt to develop a philosophy of nature in the light of the Einstein theory.

Articles in this field might be divided into those which are scientifically technical, representing science turned philosophical, and those which are more general, the reflections of philosophers upon scientific conclusions and endeavors. To the former class belong at least three significant articles. H. Margenau deals with the problem of the interpretation of the axioms of quantum mechanics, in "Critical Points in Modern Physical Theory" (*Phil. of Science*, IV, 3). N. Bohr's "Causility and Complimentarity" (*Phil. of Science*, IV, 3) is another attempt to solve some of the puzzles presented by quantum theory. R. S. Lillie's "Directive Action and Life" (*Phil. of Science*, IV, 2) brings philosophy and biological science together, an event which occurs only too seldom in philosophic journals. Philosophy of Science is certainly concerned with other sciences than Physics.

Two articles of an historical nature are midway between two classes. P. Frank, a logical positivist in Prague, in "The Mechanical versus the Mathematical Conception of Nature" (*Phil. of Science*, IV, 1) presents an historical review to show that the former has not given way to the latter. In "The Meaning of Simplicity in Physics" (*Phil. of Science*, IV, 2) R. B. Lindsay first reviews the historical notions of simplicity and then makes the novel suggestion that the simpler theory "demands the shorter time for the normally intelligent person to become familiar with it to such an extent as to obtain correct and useful results," which, it is admitted, is a pragmatic criterion.

A. G. Ramsperger argues, in "Logic and the Laws of Nature" (*J. Phil.*, XXXIV, 14), that science, as well as philosophy and logic, must find a starting point in postulates of one sort or another, one of which would involve the causal relationship. H. H. Dubs, criticizing this article, objects to an analysis based on the outmoded theory of empirical induction, which leaves out of account what he calls "rational induction" (*J. Phil.*, XXXIV, 21). Because the rise of evolutionism has shown time to be so significant, J. Ratner thinks —"Science and History" (*J. Phil.*, XXXIV, 15)—that the concept of function comes to replace that of structure, so that "history" and "nature," "structure" and "function" go hand in hand. W. M. Malisoff presents, as an experiment, a scheme for "Arranging the Sciences" (*Phil. of Science*, IV, 2). R. B. Lindsay, in "A Critique of Operationalism in Physics" (*Phil. of Science*, IV, 4) finds a thoroughgoing application of operationalism to physics to be of questionable utility.

LOGIC

It is convenient to divide articles on Logic into two classes, those in Symbolic or Mathematical Logic, and those which are either concerned with

problems of the classical logic, or else discuss problems of logic in general.

To the former class belong the following: R. M. Robinson, "The Theory of Classes. A Modification of von Neumann's System" (*J. of Symbolic Logic,* II, 1); P. Bernays, "A System of Axiomatic Set Theory" (*J. of Sym. Log.,* II, 2); A. F. Emch, "Deducibility with respect to necessary and impossible propositions" (*J. of Sym. Log.,* II, 2). T. Hailperin's "Foundations of Probability in Mathematical Logic" (*Phil. of Science,* IV, 1, Supp.), an attempt to develop "a theory of probability derived from 2-valued logic," belongs to this class as well. L. O. Kattsoff, in "Modality and Probability" (*Phil. Rev.,* XLVI, 1), tries to identify possibility and probability. E. V. Huntington's "The Method of Postulates" (*Phil. of Science,* IV, 4) is a general, non-technical discussion.

E. Bisbee, in "Confusion about Exclusive and Exceptive Propositions" (*Phil. Rev.,* XLVI, 1) is concerned with the translation of such propositions into logical form. R. M. Holmes finds "Two Jobs for the Logician" (*Phil. Rev.,* XLVI, 5). One would fill the need for symbolic expression of relations within relations; the other provides a clear expression for the operations involved in propositions. A distinction is made between benign and vicious circles in logical analysis by M. Swabey: "Circles" (*J. Phil.,* XXXIV, 12).

ETHICS AND VALUE THEORY

By way of a systematic treatise on Ethics, there is *The Concept of Morals,* by W. T. Stace (Macmillan). A number of articles have to do with value theory and its relation to Ethics. One by C. Kruzé, "Cognition and Value Re-examined" (*J. Phil.,* XXXIV, 9), seeks to "re-emphasize the family relationship existing between cognition and value" in contrast with the usual approach to value through ethics. Another by L. Wood, "Cognition and Moral Value" (*J. Phil.,* XXXIV, 9), proposes a postulational theory of moral cognition which would make moral principles neither true nor false. D. C. Williams, in "The Meaning of Good" (*Phil. Rev.,* XLVI, 4) holds with H. Savery—"The Relativity of Values" (*J. Phil.* XXXIV, 4) and "The Unique Quality of Goodness" (*Int. J. of Ethics,* XLVII, 2)—that value is relative to the purposes of the individual who judges.

G. R. Geiger identifies objectivity and social in his article "On the Meaning of Objective in Ethics" (*J. Phil.,* XXXIV, 11). N. P. Stallknecht's "The Place of Verification in Ethical Theory" (*J. Phil.,* XXXIV, 6) is inspired by the logical positivists "reduction of value judgments to imperatives." "Neither economics or ethics is vital, if divorced one from the other," is the conclusion of H. C. Brown's "Ethics from the View Point of Modern Science" (*J. Phil.* XXXIV, 5). It is argued that the pressure of economic circumstances is an important determinant of morals. Other articles of interest in Ethics are "Moral Skepticism and the Way of Escape," by A. E. Avey (*Int. J. of Ethics,* XLVII, 4) and "The Method of Proving Ethical Realism" by H. S. Fries (*Phil. Rev.* XLVI, 5).

SOCIAL PHILOSOPHY

Under this heading are brought together some of the numerous works which discuss, from a philosophical standpoint, problems having to do with society, whether they arise in connection with social theory, political theory, economics, or law.

Among the books the following are perhaps outstanding: *A History of Political Theory,* by G. H. Sabine (Holt); *Force and Reason,* by H. Kohn (Harvard Univ. Pr.); *Lasting Elements of Individualism,* by W. E. Hocking (Yale Univ. Pr.); *Theory of the Democratic State,* by M. Swabey (Harvard Univ. Pr.); *Conflict and Community: A Study in Social Theory,* by G. Simpson (Columbia Univ. Dissertation). *Planned Society: Yesterday, Today, Tomorrow* edited by F. Mackenzie (Prentice-Hall) is a symposium by 35 economists, sociologists and statesmen, with a foreword by L. Mumford.

The more philosophic articles include "The State of Nature and the Social Sciences," by A. G. A. Balz (*J. Phil.*, XXXIV, 19); "Freedom in the Modern World," by J. A. Ryan (*J. of Society Phil.*, II, 1): "Economics and Philosophy in Social Planning," by D. F. Pegrum (*J. of Soc. Phil.*, II, 4); "Social Ideals and the Law," by E. T. Mitchell (*Phil. Rev.*, XLVI, 2); "Philosophy and Democracy," by T. V. Smith (*Int. J. of Ethics*, XLVII, 4) according to which "democracy is politics no longer innocent of philosophy"; "Alternative Frames of Reference in the Spher of Human Behavior," by T. Burrow (*J. of Soc. Phil.*, II, 2); "Social Science and Human Values," by H. S. Fries (*J. of Soc. Phil.*, III, 1). Still others are "Science and Socialism," by B. Ginsburg; "Marxism and Values," by S. Hook, "Materialism and Spooks," by F. Engels (*Marxist Quarterly*, I, 1); "A Marxist Critique of Thomism," by M. Raphael; and "Dialectic and Nature," by S. Hook (*ibid.* I, 1).

Interest in these problems is apparently very great. The new journal which made its appearance in 1935 has not been able to take care of the volume of contributions, and in 1937 two others have made their bow. These are *The Marxist Quarterly* and *Science and Society*.

AESTHETICS

Two systematic works in Aesthetics have appeared. A. Torossian presents *a Guide to Aesthetics* (Stanford Univ. Pr.) and T. L. Shaw a volume entitled *Art Reconstructed, a New Theory of Aesthetics* (Marshall Jones). *Proust and Santayana: The Aesthetic Way of Life* (Willett, Clark) by V. M. Ames, is a contribution of a more casual sort. These essays tend to show that the meaning of life is to be found in "aesthetic delight." G. Boas, in *A Primer for Critics* (Johns Hopkins Pr.), shows himself skeptical of criticism, in that he would limit the authority of the critic to whatever there may be in art that is purely objective.

An article by K. E. Rosinger, "What Shall We Look For in Art?" (*J. Phil.*, XXXIV, 12) contends that art must be something other than a vehicle of communication, and that, since self-expression is involved in the part of the observer as well as that of the artist, it is a creative activity in itself.

RELIGION

Philosophic discussions of religion are comparatively numerous this year. Introductory material is provided by V. T. A. Ferm, in his *First Chapters in Religious Philosophy* (Round Table). He also edits a volume entitled, *Religion in Transition* (G. Allen). A. E. Avey, insisting that "religion is a mode of life," that its function is "to express divinity in real lives," tries to find some tenable conception in *Re-thinking Religion* (Holt). The Terry Lectures by J. MacMurray discuss *The Structure of Religious Experience* (Yale Univ. Pr.), and find that "conscious community is the key to religion." Eleven writers contribute to *The Nature of Religious Experience. Essays in Honor of Douglas Clyde Macintosh* (Harper) under the editorship of B. S. Bixler. Two of the works of H. E. Brunner appear in translation: *Philosophy of Religion* (Scribners) and *God and Man: Four Essays on the Nature of Personality* (Student Christian Movement P .). In *American Philosophies of Religion* (Willett Clark), H. M. Wieman and B. E. Meland classify 56 different views of the subject. *Mind and the Mystery* (Longmans) by C. J. Eustace, has its roots in neo-scholasticism. R. M. Jones discusses *Some Problems of Life* (Cokesbury Press) in the Cole Lectures at Vanderbilt University. W. E. Hocking treats of immortality in *Thoughts on Death and Life* (Harper). Religion is related to sociology in A. E. Haydon's book, *Man's Search for the Good Life* (Harper) in which it is found that religion is the conclusion of the search.

Students of religion are interested in D. F. Swenson's translation of the work of the 19th Century Dane, S. Kierkegaard, whose *Philosophical Fragments, or a Fragment of Philosophy* (Princeton Univ. Pr.) develops a philosophy of Christianity out of an

interpretation of Plato, in opposition to Hegelian points of view.

MISCELLANEOUS

The following articles, which are difficult to classify, are of general interest to Philosophy. L. Wood's "Philosophy and Temperament" (*J. Phil.*, XXXIV, 18) seeks to discover "what traits of temperament are philosophically efficacious" and how they may be so, with a view to a correlation between personality traits of a philosopher and his philosophical theories. H. L. Fries writes "On the History of the Philosophy of History in Western Culture" (*J. Phil.*, XXXIV, 1), and D. Walsh attempts to determine the "Philosophical Implications of the Historical Enterprise" (*J. Phil*, XXXIV, 3).

BIBLIOGRAPHY

The annual *Bibliography of Philosophy* which has been published by the *Journal of Philosophy* since 1933 to supplement the forthcoming *Bibliography of Philosophy* from 1902–1932, appears again as a double number of that periodical (*J. Phil.* XXXIV, 16, 17), with 1526 titles listed. There has also appeared a *Bibliography of Symbolic Logic* (1666–1935), which likewise is issued in a periodical (*J. of Symbolic Logic* I, 4).

ANTHROPOLOGY AND ETHNOLOGY

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GENERAL

Increasing unification of anthropological problems and the methods and problems of special fields was apparent in 1937. There were indications of renewed interest in theory, both as regards methodology, and in reference to interpretation of data on man and his history. Physical anthropological emphasis upon physiological problems of growth and variation continued. Archaeologists displayed new interest in early man in America. Attempts were made to correlate New World and Old World horizons, and to improve archaeological methods by using ancillary techniques from other sciences. As linguistic techniques improved, the relations of language and cultural experience began to be more fruitfully explored. Ethnologists reconsidered the question of social laws, and a revision of ideas on the problem of social evolution. In ethnological research emphasis continued to increase on psychological problems, the relation of sociology and psychology, and the problem of economic factors in institutional conditions and in cultural change. General books included: A. A. Goldenweiser's *Anthropology* (Crofts), a revision and expansion of his *Early Civilization* of many years ago; C. D. Forde's *Habitat, Economy and Society* (Harcourt, Brace) in an American edition; and W. I. Thomas' *Primitive Behavior* (McGraw-Hill), which R. H. Lowie called "an incomparable source book."

PHYSICAL ANTHROPOLOGY — GROWTH

Problems of growth received increasing attention. Development was signallized by a new journal, *Growth*, edited by F. S. Hammett "for the co-ordination of studies of increase and development as general properties of nature." Aging and senility became focal problems. Work of the International Committee for standardization of anthropometric techniques stimulated restudy of techniques. Descriptive studies continued and race and race differences were critically re-examined.

F. Boas, N. Michelson and W. Nussbaum studied environmental and hereditary factors in growth. Boas' results indicated a general acceleration of rate of development in New York since 1890. L. B. Chen oweth showed that "mankind in civ

ilized countries is steadily growing taller," and indicated, among probable causes, better nutrition, less communicable disease, and better standards of living (*Journal,* American Medical Association, 108:354–356). C. B. Davenport and W. Drager showed that the "Growth curve of infants" (*Proceedings,* National Academy of Sciences, 22, No. 11) is "a composite resultant of a lot of more or less independently proceeding growth processes." H. Kelly pointed out that "prediction of anatomic age at one chronological age from a known anatomic age at an earlier time is a precarious task" (University of Iowa *Studies in Child Welfare,* 12, No. 5). A. Hrdlicka (*Proceedings,* American Philosophical Society, 56:847–897; 58:79–95) showed "there exists now sufficient evidence . . . that growth and development of the body as a whole and of many if not all its parts, is not fully accomplished by . . . maturity, but proceeds . . . into the adult stage."

C. P. Stone and R. G. Parker (*Human Biology,* 9:1–27) and C. A. Mills (*idem,* 43–46) discussed problems of growth and menarche. M. Young described "Normal Facial Growth in Children" (*Journal of Anatomy,* 71:458–470). E. C. Dunham, S. D. Aberle, L. Farquhar and M. D'Amico summarized growth of Pueblo Indian children from seven to 11 years (*American Journal of Diseases of Children,* 53:739–749).

According to W. M. Krogman, T. W. Todd's *Atlas of Skeletal Maturation,* "an analysis of maturity levels in growing boys and girls, as determined by appearance and growth of epiphyses, and changes in conformation and texture of growing bones" is "indispensable in the appraisal of maturation age." Utilizing Todd's observations, C. D. Flory discussed "Osseous development in the hand as an index of skeletal development." F. K. Shuttleworth's "Sexual maturation and the physical growth of girls age six to nineteen" demonstrates the higher degree of reliability of longitudinal studies of growth. F. L. Stanton and M. S. Goldstein discussed facial growth and dental occlusion; M. S. Goldstein, development of the bridge of the nose; L. W. Baker, "the masticatory apparatus as an inductor of growth of bones of the skull"; and D. B. Bill, development of physiological functions (*American Journal of Physical Anthropology,* 22, Supplement, 4–9). F. Bernstein and A. Hrdlicka continued work on senility. M. F. Ashley-Montagu worked on aging of the skull. H. A. Simms and A. Stollman reported "Changes in human tissue electrolytes in senescence" (*Science,* 86:269–270).

HEREDITY AND ENVIRONMENT

F. Boas worked on inbreeding in populations in terms of degree of variability of family lines. W. F. Petersen described "Environmental effect and organic differentiation" (*American Journal of Physical Anthropology,* 22, Supplement, 9). W. A. Price found tooth decay and other degenerative processes follow adoption of modernized foods by native groups (*idem* 4). M. F. Ashley-Montagu argued on "Thumb-sucking" (*N. Y. Times,* March, 1937) that "buck-teeth" are practically always due to genetic factors. P. and M. W. Eaton showed that temperature affects growth of facial hair (*Science,* 86: 354). M. Kneberg continued research on human hair.

Blood groupings were discussed by W. C. and L. G. Boyd for Europe and Egypt (*American Journal of Physical Anthropology,* 23:49–70); by L. C. Wyman and W. C. Boyd for prehistoric American Indians (*American Anthropologist,* 39:583–592); and by P. B. Candela in relation to skeletal material (*American Journal of Physical Anthropology,* 23:71–18). H. L. Shapiro showed that inbreeding had led to no deterioration among the Pitcairn Islanders (*idem* 22, Supplement).

ANTHROPOMETRY

Anthropometric techniques were discussed widely. C. B. Davenport pointed out errors to be avoided (*American Journal of Physical Anthropology,* 23:91–100). Other methodological contributions included those of W. W. Howells on head and

skull (*idem* 22:477–494), A. Ciocco on sitting height (*idem* 22:467–476), T. D. Stewart on skull capacity (*idem* 23:111–122), M. S. Goldstein on weight (*idem* 22:437–465), and B. Campbell and B. B. Rubinstein on "Roentgen anthropometry" (*idem* 23:213–223). M. F. Ashley-Montagu presented "A new slide compass for cranial and cephalic measurements" (*idem* 23:123–125), and discussed "Determination of the naso-frontal suture and the nasion in the living" (*Radiology,* 28:473–476). E. A. Hooton and H. T. Hertzberg studied eye color and problems of color photography.

Descriptive studies of American Indian peoples included: F. H. S. Knowles on Roebuck Iroquois (National Museum of Canada, *Bulletin* 87); G. M. Morant on Eskimo craniology (*Biometrika,* 24:1–20); and S. F. Cook on diseases among Californian Indians, based on old sources (*Ibero-Americana,* 12). J. C. B. Grant studied the Stoney of Alberta, M. Steggerda the Maya of Yucatan, and C. T. Nelson tooth problems in Pecos' remains. R. W. Leigh described "Dental morphology and pathology of pre-Spanish Peru" (*American Journal of Physical Anthropology,* 22:267–296).

On Eurasian peoples, I. A. Lopatin described a Tungus tribe (Orochee) (*idem* 22:201–228); V. V. Ginsburg *The Mountain Tadjiks* (Moscow, 1937). H. Field analyzed the composition of the "Population of the Soviet Union" (*American Journal of Physical Anthropology,* 23:79–82) and the racial types of Iraq (*idem* 22, Supplement). C. S. Coon presented a racial analysis of Somalis and Ethiopians (*idem*), and W. M. Shanklin and N. Izzeddin described Moslem women (*idem* 22:381–415). W. W. Howells described the craniology of the "Iron age population of Great Britain" (*idem* 23:19–29), and F. Grew and A. Walton the distribution of the sexes among Britons (*Science,* 86, No. 222, p. 10). H. Dawson and W. Dupertuis studied the anthropology of Ireland.

W. W. Howells and W. L. Warner (Peabody Museum of American Archaeology and Ethnology, *Papers,* 16, No. 1) showed that "the Australians . . . are remarkably homogeneous in physical type. Admixtures of Melanesian blood . . . have had little effect." W. D. Hambly worked on New Guinea peoples.

RACE

Fundamental discussions disputed the claims of important racial inferiorities and superiorities. G. Levin summed up data on this problem for the brain (*American Journal of Physical Anthropology,* 22:297–314). H. L. Shapiro showed the lack of a basis for ideas of differences of "Quality in human populations" (*Scientific Monthly,* August, 109–118). T. R. Garth opposed concepts of a "racial mind" (*Journal of Social Philosophy,* 2:224–231) and with O. D. Smith considered intelligence test performances of American Indians (*Journal of Abnormal and Social Psychology,* 32:276–381). The history of racialism was critically reviewed by J. Barzun in *Race: a Study of Modern Superstition* (Harcourt, Brace). E. A. Hooton's *Apes, Men and Morons* (Putnam), disclaiming racialism, nevertheless emphasized eugenic solutions of social problems, a stress upon the relation of heredity to behavior that would not be widely accepted among anthropologists. Descriptively, R. C. Moehlig considered the "Mesoderm of the Negro" (*American Journal of Physical Anthropology,* 22:297–314), and D. Rothman described arterial conditions in whites and Negroes (*idem* 425–435).

LINGUISTICS

Improved linguistic recording and analysis continued. Where descriptive work has been done, comparative studies seek to determine the exact phonetic formulae which link related languages. Grammatical studies tend more toward fundamental semantic problems and the relation of linguistic structures to experience.

Under the auspices of the Linguistic Society of America, there were organized a Group for Phonemics which will become part of the International Association for Phonology, and a Group for American Indian Linguistics. The latter planned

research, a regular journal on American Indian linguistics, and a bulletin of information to be issued shortly; and met in New York and New Haven for conferences on Siouan and Salishan languages, and problems of word classification and concepts of time and space in American Indian languages.

American Indian linguistic research included Algonquin (M. Swadesh, C. F. Voegelin, C. Hockett, F. Siebert, Jr., O. Eggan), Aleut (M. Jacobs), Athapascan (B. Haile, G. Reichard), Salishan (H. Vogt), Kalapuyan (M. Jacobs), Iroquoian (M. Swadesh), Siouan (F. Boas, W. Swadesh, G. Marsh), Muskhogean (M. Hass, M. Swadesh), Tunican (M. Hass), Chitimachan (M. Swadesh), Shoshonean (B. L. Whorf), and Tanoan (G. L. Trager).

Indian languages of Latin America have received increasing attention in recent years. Research included Zapotec, Otomi, Tlappanec and Huave by P. Radin, Chichimeco by J. De Angulo, Mayan by M. J. Andrade, Kechua by E. Dijour, Pipil by L. Schultze-Jena, Cora by K. Th. Preuss, and Kaingang and Pilage by J. Henry. M. J. Andrade's research on Mam and Aguacatec in Guatemala the past year showed that Mam may be basic to the history of the whole Mayan stock. Yale sent M. Emeneau to Southern India to study Dravidian. J. F. Stimson worked on the Tuamotu of Polynesia.

Publications included: F. Boas, "Some traits of the Dakota language" (*Language,* 13:137–141); B. Haile, "Origin legend of the Navaho enemy way" (Yale University *Publications in Anthropology,* 17); M. Jacobs, "Sahaptin texts" (Columbia University *Contributions to Anthropology,* 19); G. Weltfish, "Caddoan texts" (*Publications,* American Ethnological Society, 17); M. Jacobs, "Texts in Chinook jargon" (University of Washington *Publications in Anthropology,* 7:1–27); R. Lehmann-Nitsche, "Die Sprachliche Stellung der Choropí, Gran Chaco" (*Zeitschrift für Ethnologie,* 1936, 303–304); H. Baldus, "Tereno Texte" (Brazil, *Anthropos,* 32:528–545); and H. König, "Die Eskimo Mundarten von Nord-und Nordost-Labrador" (*idem* 595–633). Forthcoming were: E. Sapir and M. Swadesh, *Nootka Texts* (Yale University Press); M. Swadesh, "Internal syntax of the Nootka word" (*International Journal of American Linguistics*); H. Hoijer, *Chiricahua Apache and Mescalero Apache Texts* (University of Chicago Press); M. Jacobs, *Coos Ethnographic Texts* (University of Washington Press); and M. Haas "Geminate consonant clusters in Muskogee." J. H. Steward summarized dialectic distributions of Great Basin Shoshoneans (*American Anthropologist,* 39:625–634).

In comparative work B. L. Whorf reconstructed the "Origin of Aztec tl" (*idem* 39:265–274), and with G. L. Trager analyzed "The relationship of Uto-Aztekan and Tanoan (*idem* 39:609–624); H. Hoijer described fundamental traits of the "Southern Athapaskan languages" (*idem* 40: 75-87) and offered a classification "representing the probable historical development of the Southern Athapascan languages after their separation from Athapascan languages of the north." C. C. Uhlenbeck suggested that Indo-Germanic languages go back to two prototypes, one to be connected with Ural-Altaic, the other with Caucasian languages (*idem* 39:385–393).

Attacking semantic problems, B. L. Whorf's "Linguistic consideration of thinking in primitive communities" stressed the fundamental importance of linguistic analyses for understanding mental behavior

ARCHAEOLOGY — EARLY MAN IN AMERICA

The International Symposium on Early Man at Philadelphia in March, 1937 brought the antiquity of man in the New World to renewed attention (G. G. MacCurdy, editor, *Early Man,* Lippincott). H. J. Spinden treated the "First Peopling of America as a chronological problem" (105–115). P. S. Smith described geological conditions which made repeated migrations from Asia to Alaska *via* Bering feasible (85–92).

H. B. Collins (*American Antiquity,* 2:307–308) reported negative results of a search for pre-Eskimo or non-Eskimo remains along Alaskan coasts and suggested that "cultural remains dating from that remote period if present at Bering Strait are completely covered over." N. C. Nelson (*American Antiquity,* 2:267–273) pointed out important stylistic similarities between flint specimens from Alaska and Mongolian finds of a preneolithic Azilian-Tardenoisian horizon. K. Birket-Smith (*Early Man* 293–303) suggested Eskimo cultural origins involved a generalized inland ice-fishing culture widely distributed not only in America but also in European and Asiatic polar regions, which had differentiated in two ways —toward maritime life and toward snowshoe hunting in inland forests.

F. H. H. Roberts (*Early Man,* 153–163) summarized the "Folsom problem in American archaeology," characterizing Folsom man as a late Fleistocene hunter of bison and occasionally camel and mammoth. Antiquity of Yuma-type flint points was indicated by F. G. Rainey's find of one near Fairbanks, Alaska, frozen into part of a mastodon skull.

H. S. Gladwin (*Early Man,* 133–139) criticized attempts to use the typology of European prehistory for early American horizons, suggesting the probability that cultures of Europe and America differed in late glacial times.

A. E. Jenks reported on a primitive Homo Sapiens of early Mongoloid type, nearer the Eskimoid than the Asiatic, and estimated at 20,000 years old, which had been found in Minnesota. General agreement has not been reached on this find, which is felt by some to resemble types found among modern Sioux Indians. (See also A. Hrdlicka in *Early Man,* 93–106, and in *American Journal of Physical Anthropology,* 22:175–200). Jenks also reported on "Brown's Valley Man," probably a primitive American Indian type of about 8,000 to 12,000 years ago. No correlation between these suggested early types and cultural horizons, such as Folsom or Yuma, have yet been achieved.

Greater refinement has developed in the use of ancillary techniques for establishing antiquity and chronology. These include the use of "pollen profiles" by P. B. Sears (*Early Man* 61–66); geologic conditions emphasized by P. MacClintock (*idem* 115–124) and M. M. Leighton (*idem* 163–173); climatology by E. Antevs (*idem* 125–132); and faunal condition by E. H. Colbert (*idem* 173–185) and E. H. Barbour and C. B. Schultz (*idem* 185–193).

Further evidences of antiquity of man in America accumulate. F. C. Hibben reported "Associations of man with pleistocene mammals in Sandia Mountains, New Mexico" (*American Antiquity,* 2:260–263): the Cochise culture of S. E. Arizona and S. W. New Mexico, described by H. S. Gladwin, was dated by E. Antevs at more than 10,000 years old. J. Bird reported "Human artifacts in association with horse and sloth bones in southern South America" (*Science* 86:36–37).

PLAINS

In the Plains effort continues to identify prehistoric cultures with historic peoples by studying historically identifiable sites. W. R. Wedel, E. H. Bell, and A. T. Hill worked in Nebraska and Kansas in connection with the University of Nebraska survey. Hill excavated an Oto site and suggested an identification of Oto with Oneota. Wedel worked on a site of the Grand Village of the Kansas. The University of Chicago has carried forward a survey in Illinois and Iowa in an attempt to identify village sites of Peoria Indians, and link Iowa with Oneota culture. W. V. Kinietz of the University of Michigan studied the 17th century history of Michigan Indians for clues to identify sites for excavation. The University of Denver continued its publication of an archaeological survey of the High Western Plains.

SOUTHWEST

The chronological development of culture in the Southwest from Basket-Maker into Pueblo times has been further clarified by tree-rin

dating of F. Hawley (*American Antiquity,* 3:247–256) and D. Senter (*idem* 3:68–75) on Chaco Canyon sites, and by J. O. Brew's integration from deposits of early Hopi levels with this prehistoric sequence (*idem* 3:122–137). R. L. Malcolm further reported evidence of earlier Navajo habitations of stone houses which may link them with Chaco canyon horizons. P. Martin and A. Gaumer (*Masterkey,* 11:160–165) reported further on Basket-Maker and Early Pueblo sites of Colorado and Utah, respectively.

In various peripheral areas of the Southwest, evidence of pre-ceramic, non-basket-making cultures has accumulated. Wormington found three levels of stone industry in southwest Colorado, the lowest being of the earlier California Pinto Basin type. M. R. Harrington (*Masterkey,* 11:86–89, 122–124) reported pre-ceramic culture under Paiute and Pueblo III deposits in Nevada, and also pre-ceramic pit dwellings. H. M. Sayre found remains of a non-ceramic, non-basket-making people in Montana. These cultures have not been correlated with Folsom horizons. Furthermore, in F. H. H. Roberts' summary of southwestern archaeology (*American Antiquity,* 3:3–33), he indicates that no connection has yet been found between any of these early hunting horizons and the Hohokam (pre-Piman) and Anasazi (Basket-Maker—Pueblo) developments of the Southwest.

EASTERN AREAS

Tree-ring dating is being successfully carried into Eastern areas. G. R. Willey reported that heterogeneous southeastern conditions made it necessary to develop more limited dendrochronological areas than were used in the Southwest. A 100-year sequent calendar has been established. Dr. F. Hawley Senter was in charge of a University of Chicago tree-ring project which was to begin a survey of modern trees from middle western, eastern and southeastern States. W. S. Glock's *Principles and Methods of Tree Ring Analysis* (Carnegie Institution) appeared. H. C. Shetrone announced the establishment of a Lithic Laboratory for the eastern United States at Ohio State University. J. B. Griffin continued studies on material in the Ceramic Repository of the eastern United States at the University of Michigan.

F. C. Cole and T. Deuel's *Rediscovering Illinois* (University of Chicago Press) summarized research which established five levels of culture sequence. W. K. Moorehead suggested that all eastern mound cultures exhibited common characteristics, and that the concept of Woodland should perhaps be a sub-classification rather than a major cultural division. W. C. McKern (*American Antiquity,* 3:139–143) offered a "Hypothesis for Asiatic Origin of the Woodland culture pattern." A. R. Kelley reported from the Southeast pyramid mound types in central Georgia fundamentally related to Lower Mississippi forms. J. B. Griffin (*American Antiquity,* 2:273–276) found it impossible as yet to link the Ft. Ancient culture to any known historical peoples.

W. C. Ritchie reported a "Newly defined culture aspect in New York," the Laurentian, transitional between archaic Eskimo-like (Lamoka) and the first Algonkian period (Vine Valley), which can be traced by pottery types down the St. Lawrence to central New York. Ritchie noted "Culture influences from Ohio in New York archaeology" (*American Antiquity,* 2:182–194). W. F. Stiles investigated sites near New York City. D. G. Byers continued work on the "red-paint" cultures of Maine. V. J. Fewkes (*American Antiquity,* 3:143–156) and W. J. Wintemberg (National Museum of Canada, *Bulletin* 83) published on sites in Manitoba and Ontario.

MEXICO, CENTRAL AND SOUTH AMERICA

W. C. Bennett published a survey of "Archaeological work in South America" (*American Antiquity,* 2:248–259), and J. E. Thompson a leaflet on the "Archaeology of South America" (Field Museum of Natural History). Increasing work in this field

led to the formation of an Institute of Andean Research with A. L. Kroeber, chairman. W. C. Bennett's "Chimu Archaeology" (*Scientific Monthly*, July, 35–49) and "Excavations at La Mata, Maracay, Venezuela" (*Anthropological Papers*, American Musuem of Natural History, 36:69–137) also appeared.

G. C. Vaillant described "History and stratigraphy in the Valley of Mexico" (*Scientific Monthly*, 44:307–324), and J. A. Mason published "Observations on the present status and problems of Middle American Archaeology" (*American Antiquity*, 3:206–223). F. M. Cresson described the Mayan sweat houses whose function was recently identified for the first time (*American Anthropologist*, 40:88–104). Mayan calendar problems were discussed by H. Noll-Husum (*Zeitschrift für Ethnologie*, 1937 1–3:53–63); and J. E. Thompson (Carnegie Institution, *Contributions to Archaeology*, 4:177–197). Other publications included: H. Beyer's "Studies of inscriptions at Chichen Itza" (*idem* 4:no. 26:29–175); S. K. Lothrop's "Cocle, an archaeological study of Central Panama" (Peabody Museum, *Memoirs*, 7) and "Zacuapa, a study in ancient Quiché artifacts" (Carnegie Institution of Washington, No. 472). B. I. Rouse continued work on the archaeology of Porto Rico.

ETHNOLOGY AND SOCIAL ANTHROPOLOGY — RESEARCH

Investigations among North Indian groups included: Montagnais (R. Flannery), Chippewa (M. Fisher), Fox (N. Joffe) of the Woodlands; Arapaho (H. Elkin) of the Plains; Shoshoni (J. Harris), Paviotso (W. Z. Park), Southern Ute (M. Opler), Northern Ute (A. M. Cook), Northern Paiute (B. Blyth), Kutenai and Flathead (C. E. Schaeffer), Kalispel (A. H. Smith), and Washo (E. Siskin) of the Plateau and Basin; Kawaiisu and Kitanemuk (M. Zigmond), Wailaki and other groups of Round Valley (A. Sussman) of California; Navaho (G. Reichard, C. Kluckhohn, H. Tschopik) of the Southwest; Tsimshian (V. Garfield), and other groups of the Northwest and Northwest Coast (V. Ray, E. Gunther, G. Barnett, P. Drucker); and t Ingalik of Anvik and Ahtena of Co per River, Alaska (C. Osgood).

Work in Mexico and Centr America included: Yaqui and Ma (R. L. Beals, E. H. and R. B. Spice Huichol and Cora (D. B. Cordr research on acculturated Mexic village groups (R. Redfield, R. Bu zel, A. Villa, A. T. Hansen), a communities of the highlands Guatemala (S. Tax, C. Wagley, Mirsky). In South America, W. Li kind and B. Quain were amo Brazilian tribes, B. Mishkin and W. La Barre in Peru, J. Henry amo the Pilaga of the Gran Chaco, Z. Park among tribes of Northe Columbia, E. E. Loch and W. V Hagen among tribes of Ecuador.

Outside the Americas, M. Me worked in Bali, C. Du Bois in Tim of Dutch East Indies, D. Mandelbau among Kota of Southern India, C. Ford in Fiji, and W. Bascom in We Africa.

Monographs of note included: L. Warner's "A black civilizatio (Harpers), a social study of an Au tralian tribe; W. Whitman's "Ot (Columbia University *Contributio to Anthropology*, 28); R. Land "Ojibwa sociology" (*idem* 29); C. Osgood's "Contributions to ethno raphy of the Kutchin" (Yale Un versity *Publications in Anthropolog* 14) and "Ethnography of the Tan ina" (*idem* 16); E. Beaglehole "Notes on Hopi economic life (*ide* 15); P. Drucker's "Tolowa and the southwest Oregon kin" (Universi of California *Publications in Ame can Archaeology and Ethnolog* 36:221–300); D. Jenness' "Sekani I dians of British Columbia" (Nation Museum of Canada, *Bulletin* 84); N. B. Hewitt, editor, "Journal Rudolph Kurz" (Bureau of Amer can Ethnology, *Bulletin* 115); a E. G. Burrows' "Ethnology of Uv (Wallis Island)" (B. P. Bishop M seum, *Bulletin* 145).

In shorter studies V. F. Ray di cussed the cultural position of th Lower Chinook (*Pacific Northwe Quarterly*, 28, no. 9), J. H. Stewar outlined distributions of Great Basi

Shoshoneans (*American Anthropologist,* 39:625–634), and H. G. Barnett described the "Coast Salish of Canada" (*idem* 40:118–141). D. S. Davidson showed there is no "satisfactory evidence . . . that the basic cultures of Tierra del Fuego and Australia are historically related" (*idem* 39:229–243). Comparative studies included: D. S. Davidson's on the dart-game (*Journal of the Polynesian Society,* 45:99–126, 46:1–23); J. H. Steward's "Ecological aspects of Southwestern Society (*Anthropos,* 32:87–105). Element distribution studies were by E. W. Gifford and A. L. Kroeber on the Pomo (University of California *Publications in American Archaeology and Ethnology,* 37:117–254). P. Drucker on Southern California (*Anthropological Records,* 1:1–52). H. E. Driver on Southern Sierra Nevada (*idem* 1:53–154), and H. G. Barnett on the Oregon coast (*idem* 1:155–204). E. Beaglehole summarized the status of "Polynesian anthropology today" (*American Anthropologist,* 39:213–221).

SOCIOLOGICAL STUDIES

Social Anthropology of North American Tribes, edited by F. Eggan (University of Chicago Press), included studies in kinship and social organization on Cheyenne and Arapaho by F. Eggan, Kiowa-Apache by J. G. McAllister, Chiricahua Apache by M. E. Opler, Fox by S. Tax, Eastern Cherokee by W. H. Gilbert. W. E. Lawrence's "Alternating generations in Australia" (*Studies in the Science of Society:* 319–354, Yale University Press) was a basic revision of approaches to the study of Australian social organization. S. Tax (*American Anthropologist,* 39:423–444) and C. Wagley described types of village groupings in Guatemala.

Economic factors were stressed in B. Mishkin's "Rank and warfare in the Plains," which showed the important effects of horse utilization and horse trading; in M. K. Opler's summary of transformations in Southern Ute society resulting from Plains influence; and in J. Harris' description of the "Band mobility among the western Shoshoni" in terms of Great Basin economic conditions. H. Elkin discussed social effects of the graded age pattern of Arapaho societies. M. Titiev described Hopi cross-cousin marriage (*American Anthropologist,* 40:105–111), R. Flannery that of Cree and Montagnais; and A. I. Hallowell analyzed changing conditions of polygyny among Cree and Saulteaux. G. Devereux discussed social groupings in a tribe of Indo China (*Primitive Man,* 10:1–7).

"Structural analysis of kinship" was offered by K. Davis and W. L. Warner (*American Anthropologist,* 39:291–313). M. E. Opler (*idem* 201–212) and A. L. Kroeber (*idem* 39:602–608) discussed Athapascan kinship systems. G. Goodwin described southern Athapascan clans (*idem* 394–407). According to F. G. Speck, southeastern Siouan evidence of matrilineal descent was questionable, and early Tutelo and Catawba conditions had probably been sibless and bilateral (*idem* 40:1–12). From northern Brazil, C. Nimuendaju and R. H. Lowie described moieties of the Ramkó kamekra (*idem* 565–582). Han Yi Feng described the "Chinese kinship system" (*Harvard Journal of Asiatic Studies,* 2, no. 2:141–275).

Problems of primitive law, as discussed by Malinowski, were critically examined by W. Seagle (*American Anthropologist,* 39:275–290). M. Mead described primitive mechanisms of public opinion (*Public Opinion Quarterly,* 1:5–16) and J. Lips specific Montagnais-Naskapi conditions (*American Anthropologist,* 39:222–228). Sanctions of Plains culture were analyzed by J. H. Provinse (*Social Anthropology of North American Tribes,* 341–374), of Fiji by D. M. Spencer. D. Rodnick discussed status among the Assiniboine (*American Anthropologist,* 39:408–416). Land tenure was discussed by J. M. Cooper (Algonquian), E. E. Bacon (nomadic Kazaks of Asia), and E. Reh (Mixtec).

RELIGION

Descriptive accounts included: F. G. Speck, "Oklahoma Delaware ceremonies, feasts and dances" (*Memoirs,* American Philosophical Society, 7);

T. Michelson, "For miscellany" (Bureau of American Ethnology, *Bulletin* 114); G. Goodwin, "White Mountain Apache religion" (*American Anthropologist,* 40:24–37); W. N. Fenton, "Seneca society of faces" (*Scientific Monthly,* 44:215–238). G. Devereux analyzed "Mohave soul concepts" (*American Anthropologist,* 39:417–423). W. Z. Park studied the distribution of shamanism in western areas. M. Bruns, R. J. Sullivan, and E. Ward offered a bibliography on primitive ethics (*Primitive Man,* 10:25–30). V. F. Ray described the Plateau Spirit Dance (*American Anthropologist,* 39:593–601) and its relation to the Plains Sun Dance. P. Nash discussed the import of revivalism among the Klamath (*Social Anthropology of North American Tribes,* 377–444) and the Modoc, and showed that, after the excitement of revival has waned, whatever the form of revivalistic doctrine has been, a native group becomes amenable to modernization. M. F. Ashley-Montagu suggested that subincision in Australia originated as a method of feminizing the male in appearance of the genitalia and in production of occasional effusions of blood (*Oceania,* 8:193–207).

TECHNOLOGY

Important contributions on metal work included P. Bergste's *Metallurgy and Technology of Gold and Platinum among pre-Columbian Indians* (Copenhagen), and W. Cline's *Mining and Metallurgy in Negro Africa* (General Series in Anthropology 5). D. S. Davidson described "Snowshoes" (*Memoirs,* American Philosophical Society 6) and "Stone axes of western Australia" (*American Anthropologist,* 40:38–48; and A. C. Haddon and J. Hornell canoes of Oceania and Australia (B. P. Bishop Museum, Special Publications 28, 29). D. S. Davidson presented a "Preliminary consideration of aboriginal Australian decorative art" (*Memoirs,* American Philosophical Society 9).

FOLKLORE AND MUSIC

A symposium on problems and methods of folklore research featured the fiftieth anniversary meeting the American Folklore Society December. F. Boas summarized years of folklore history, and Thompson discussed American fol lore study in retrospect and prospe R. F. Benedict showed that domina themes and motivations of the fol lore of a people were related to bas patterns of their cultural contex G. Herzog traced "Sources of prim tive poetic meter" in the subordin tion of text material to rhythmic pa terns. H. Halpert analyzed the ro of the folksong in the contempora folksinger's life.

Publications included: P. Colu *Legends of Hawaii* (Yale Universi Press); J. F. Stimson, "Tuamotu legends" (B. P. Bishop Museu *Bulletin* 148); E. C. Parsons, "Mex can Idolos in folklore" (*Scienti Monthly,* 44:470–473); J. M. Esp nosa, "Spanish folk tales from Ne Mexico" (*Memoirs,* American Foll lore Society, 30); L. C. Wyma "Origin legends of Navaho divinato rites" (*Journal of American Folklor* 49:134–142); A. M. Espinosa, "Pueb Indian folk tales" (*idem* 69–133 and W. D. Wallis, "Folk tales fro Shumopovi, Second mesa" (*ide* 1–68). The Southeastern Folklo Society was established at Universit of Florida and began publication the Southern Folklore Quarterly.

Collecting of native music include Toda (D. G. Mandelbaum), Bali (G McPhee), Malaysia (C. Du Bois and Navaho (G. Reichard). F. Dens more worked on Alibamu, G. Herzo on Piman, West African (Jabo) an Navaho music. H. Halpert recorde folk songs in New Jersey.

The relations of music and lan guage are emphasized in work o primitive music. Folk song collectin now includes indigenous America material as well as songs of tradi tional English origin, and secula songs as well as spirituals are bein gathered in the Negro field. Yugo slav epic poetry was studied by A B. Lord and G. Herzog.

Publications included: G. Herzog "Comparison of Pueblo and Pima musical styles" (*Journal of America Folklore*); F. Densmore, "Cheyenn

and Arapaho music" (*Southwest Museum Papers* 10); E. M. von Hornbostel, "Fuegian songs" (*American Anthropologist*, 38:357–367); M. Kolinski, "Suriname music" in M. J. and F. S. Herskovits, "Suriname folklore" (Columbia University *Contributions to Anthropology*, 27). Folk song publications of note were: G. P. Jackson, "Spiritual folk songs of early America" (New York); J. W. Hendren, "Study of ballad rhythm" (Princeton); and B. A. Botkin, "American play-party song" (Lincoln, Nebraska).

PSYCHOLOGICAL PROBLEMS

Interest increased in psychological aspects of culture and the relations of psychology and anthropology. E. Sapir, E. F. Benedict, A. I. Hallowell and others advanced work on the "Handbook of psychological leads for ethnological field workers." E. W. Burgess edited a symposium on "The contribution of psychiatry to the understanding of human society" (*American Journal of Sociology*, 42, no. 6). W. F. Ogburn discussed "Culture and sociology" (*Social Forces*, 16:161–169). C. Du Bois described "Psychological objectives and techniques in ethnography" (*Journal of Social Psychology*, 8:285–300), and C. Du Bois (*Psychoanalytic Review*, 24:246–263) and H. S. Mekeel (*Journal of Social Philosophy*, 2:232–236) discussed relations of psychoanalysis and anthropology.

Studies included: E. W. Voegelin, "Suicide in northeastern California" (*American Anthropologist*, 39:445–456); E. A. Kennard, "Hopi reactions to death" (*idem* 39:491–497); E. Beaglehole, "Emotional release in a Polynesian community" (*Journal of Abnormal and Social Psychology*, 32:319–328); and R. Landes, "Personality of the Ojibwa" (*Character and Personality*, 6:50–60). D. Efron and J. P. Foley discussed the relation of "Gestural behavior and social setting" (*Zeitschrift für Sozialforschung*, 6:152–161).

M. Mead edited *Co-operation and Competition among Primitive Peoples* (McGraw-Hill), in which institutional factors affecting social attitudes and motivations were assessed among 13 native peoples. A. I. Hallowell (*American Anthropologist*, 39:647–670) showed that temporal orientation among the Saulteaux Indians "depends upon the recurrence and succession of concrete events" and pointed out that the difference between such temporal orientation and our own abstract conception of time is a "function of culturally constituted experience."

ACCULTURATION

Acculturation problems were considered by F. V. Scholes for Yucatan (*Scientific Monthly*, 44:530–538) and by D. G. Mandelbaum on northern Indian tribes (*Social Forces*, 16:117–119). M. E. Opler described the "Influence of aboriginal pattern and white contact on a recently introduced ceremony: the Mescalero peyote rite" (*Journal of American Folklore*, 49:143–166). P Nash offered studies of revivalism and acculturation (*op. cit.*). M. J. Herskovits described Africanisms in New World Negro belief (*American Anthropologist*, 39:635–643) and discussed the "Significance of the study of acculturation for anthropology" (*idem* 39:259–264). J. E. Lips' *The Savage Hits Back* (Yale University Press) was a compilation of native art from all over the world illustrating aboriginal reactions to changing conditions of contact with Europeans.

METHOD AND THEORY

Interest in the history of anthropology was evidenced by the appearance of R. H. Lowie's *History of Ethnological Theory* (Farrar and Rinehart) in which for the first time an attempt is made to assess the methodological origins and development of contemporary ethnological approaches. Excellent on what it includes, particularly early and recent work, the treatment lacks evaluation of the immediately contemporary and makes little attempt to interrelate historical tendencies in anthropology with tendencies in other fields of thought.

M. F. Ashley-Montagu's *Coming into Being among Australian Aborig-*

ines (Routledge), an examination of the evidence on procreative beliefs among the Australians, interpreted the problem in terms of the fundamental relation of cultural experience and belief. P. Radin's *Primitive Religion, its Nature and Origin* (Viking) attempted an over-simplified interpretation of the phenomena of primitive religion in terms of economic factors of conflict between interests of priests and laymen.

Theoretical aspects of kinship and social organization were discussed by S. Tax (*Social Anthropology of North American Tribes*, 3–34), and in *Kinship, the Family and the Clan* A. Lesser offered a revision of concepts in terms of which the evol tionary problem of priority of fami or clan becomes a pseudo-proble and the developmental change fro early kinship-clan conditions to lat political forms is seen as a result increasing social specialization du to economic changes.

R. H. Lowie's *Concept of Laws Anthropology* and A. Lesser's *R search Procedure and the Concept Laws* discussed a revision of anthr pological theory on the possibility laws in social phenomena. Less suggested an operational conceptio of laws in terms of the working normal expectations of the researc scientist.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Anthropological Society, Inc., 70 Fifth Ave., New York City.

American Genetic Assn., 308 Victor Bldg., Washington, D.C.

American Philosophical Society, 104 S. 5th Street, Philadelphia, Pa.

American Psychiatric Assn., 2 East 103rd St., New York City.

American Psychological Assn., Univ. of Minnesota, Minneapolis, Minn.

American Psychopathological Assn., 520 Commonwealth Ave., Boston, Mass.

American Society for Physical Re search, 15 Lexington Ave., Ne York City.

American Sociological Society, 112 E. 59th St., Chicago, Ill.

National Committee for Menta Hygiene, 50 West 50th St., Ne York City.

National Institute of Social Sc ences, 271 Madison Ave., Ne York City.

Psychological Corporation, 522 Fift Ave., New York City.

PART SEVEN
THE HUMANITIES
DIVISION XXV
LITERATURE AND LANGUAGE
FICTION

By Peter Monro Jack

Critic and Lecturer

GENERAL

American fiction in 1937 had much to represent it, less to recommend it. A fertile year for good novels of the second class and for some brilliant displays of virtuosity, it was not notable for new energy or originality nor is there much of importance to say of its trend. The very few established novelists who published at all were disappointing. To take an arbitrary example of the uncertainty of the times, Sinclair Lewis gave up writing on his new novel to type journalistic reviews and make a lecture tour of the country.

In popularity, historical fiction continued to lead all other kinds, with novels of the Revolutionary and Civil Wars in abundance and chronicles of private families filling in the years between. English fiction experienced a similar, if less well written, revival of history, particularly of the Regency and Victorian periods.

The tide of proletarian novels has receded with the governmental effort to better the conditions of the working classes and with the increasing dubiety over the Stalin régime. The hard-boiled school of fiction had a slight revival in various disguises. The coast and country regional novel seems to have temporarily written itself out.

An unusual number of novels deal with foreign countries: China, Spain, India, Central Asia, Peru, South Africa, reflecting, no doubt, something of the international tension. In general it has been a mixed and mediocre year, with no great contribution from the older writers, a few promising but as yet not entirely convincing newcomers, and a sporadic brilliance that will be mentioned in its place.

THE AMERICAN PAST

Here may be included both historical and chronicle novels, since the line of demarcation is thin. The year opened with Margaret Mitchell's Civil War novel, *Gone with the Wind* (Macmillan), still the best seller (it has sold 1,500,000 copies), along with Walter D. Edmonds's *Drums Along the Mohawk* (Little, Brown), and it closed with another historical novel, Kenneth Roberts's *Northwest Passage* (Doubleday, Doran), with over 300,000 copies sold to date, as chief favourite. This is a story of the career of Major Robert Rogers, the great Indian fighter of pre-Revolutionary days. It teems with words, characters, and exact historical data, since Mr. Roberts is one of the most erudite of historical novelists. At its best in the earlier American scenes, notably the expedition against the St. Lawrence River Indian settlement, it loses it-

self in a maze of intrigue in the London scenes at the end. This is the first real success of Mr. Roberts who has been writing historical novels of the Revolutionary wars for years (*Arundel, Rabble at Arms, The Reckless Lady*) and it is well deserved. A footnote to this period is Neil H. Swanson's *The First Rebel* (Farrar & Rinehart), an interesting and authenticated account of James Smith and his Pennsylvania uprising in 1765 with British and Indian conflicts.

Esther Forbes's *Paradise* (Harcourt, Brace) reconstructs a family history of the Massachusetts Bay Colony in the 17th century with all the eccentrics, witches, fanatics and romantic figures of this early pioneering community and its struggles against the Indians—a dramatic, well-written and characteristic chronicle, one of the better books of the American past. Michael Foster's *American Dream* (Morrow) brought this story up to date, dramatising the American nineteenth century through a family chronicle and ending in the defeat of the contemporary representative of the romantic dreams of his ancestors; his retreat or withdrawal from modern life was generally criticised as an unworthy conclusion. Also joining the recent past to the present was Sylvia Chatfield Bates's *The Long Way Home* (Harcourt, Brace), from the late Fifties to the present moment, from New England to California and back to New York.

Two novels of the Civil War stood out: Caroline Gordon's *None Shall Look Back* (Scribner), a novel of Kentucky and especially the part played in the Confederate Army by Major General Nathan Bedford Forrest, distinguished by the best writing in the contemporary historical novel; and Clifford Dowdey's *Bugles Blow No More* (Little, Brown), a glorification of Virginia's part in the war, its authentic detail better than its style.

Published early in January, John P. Marquand's *The Late George Apley* (Little, Brown) achieved a rather surprising success, following, probably, the interest in Santayana's *The Last Puritan*. It is a literate a subtle characterization of a Bost Back Bay Brahmin in a mixed to of irony and understanding, a though it might fairly be describ as pastiche, most surveys have cluded it among the notable boo of 1937.

CITY REALISM

Turning to the American prese it is found that the grim story youth growing up in the toug streets of New York and Chicago h a kindlier and more humorous fa than the bitter and cynical denunci tions of recent years. Meyer Levi *The Old Bunch* (Viking) is rep sentative. It is a solid factual stud with the background carefully bas on newspaper realism, of the yout ful development of 19 Chicago Je ish boys and girls, from 1921 to 193 leaving the sweatshop labor of the immigrant parents for law, medicin politics, racketeering, gambling, mere idleness and futility. What important is the interest displaye in individual character considered itself instead of as a symbol of soci oppression.

Jerome Weidman's *I Can Get for You Wholesale* (Simon & Schu ter) is an even more remarkab combination of crude realism an editorial understanding. A first an very promising novel by a youn writer, it presents a smart, mea hard-boiled, racketeering "guy" fro the women's-dress business on Ne York's Seventh Avenue, contrastin with the humanity of his mother an the irony of his author. Dani Fuchs's *Low Company* (Vanguard is less important with its set Coney Island characters since, i spite of some humour, it is no mor than superficially realistic, a "how rather than a "why" novel. Edwar Newhouse's *This Is Your Day* (Le Furman), a second novel by a youn communist, tells of Hungarian im migrants in East Side New York saving itself by a humorous edge t its serious ideology. One of the fe novels to show that the social an industrial life of New York can b represented without extremes of real

ism or radicalism was R. L. Duffus's *Night between the Rivers* (Macmillan). In *Imperial City* (Coward-McCann), Elmer Rice, the dramatist, roamed the City of New York from Wall Street to Coney Island, Broadway to Park Avenue with a lavish crowd of characters: directors, politicians, gold-diggers, prostitutes, psychoanalysts, dipsomaniacs, actors, and the like, an interesting novel from the fertile reportorial mind of Mr. Rice, but not a distinguished one. In *The Chute* (Viking), Albert Halper substitutes processes for persons and gives exact and endless details of a mail-order company in Chicago.

ERNEST HEMINGWAY

The most discussed novel of the contemporary scene was Ernest Hemingway's *To Have and Have Not* (Scribner), his first novel in eight years. The scene is Key West, Fla., the chief character a disreputable motor boat owner who hires himself for fishing parties or rum-running indifferently, the theme that his difficulties and violent death are somehow not his fault but the fault of society, that he has no choice in the matter. Hemingway admires his character's animal vigor, his laconic forthrightness and his recklessness, and makes the most of this in dialogue, contrasting his energy with the exaggerated futility of various types of social parasites and degenerates. Technically the writing is hard and brilliant and very frank in its diction. The glamour of its style excepted, the novel rests on an insecure moral and social basis most useful, perhaps, for Leftist propagandists.

Something of a disciple of Hemingway, James Cain's *Serenade* (Knopf) was hailed in some quarters as a masterpiece. It is an odd book, exciting as bootleg liquor, of an opera star who sings well when he lives with a woman (a Mexican Indian prostitute) and ill when he lives with a man (a caricatured New York impresario), a high-class thriller that is not likely to be read twice.

AMERICANS ABROAD

Two excellently written novels have found their material abroad. Hans Otto Storm's first novel, *Pity the Tyrant* (Longmans), introduces a new tale with a sharp and unerring edge even though dealing with difficult matter. The scene is Lima, Peru, where an American engineer lives for a year, mixing easily and understandingly with an assortment of Peruvian characters against a threatening background of revolutionary tyranny—no story, but an extraordinarily acute kind of impressionism. Frederick Prokosch's second novel, *The Seven Who Fled* (Harper) won the Harper annual novel prize (judges: Sinclair Lewis, Louis Bromfield, Thornton Wilder), a strange, fantastic, and, in style, orgiastic tale of seven Europeans who fled from a city in Central Asia, and their fateful wanderings. With a Poesque feeling for horror and suspense and a cunning and elaborate vocabulary, Prokosch is marked as one of the best equipped of the younger romantic writers in poetic style and intense feeling.

Louis Bromfield turned to India in *The Rains Came* (Harper) to create a panoramic story of a modernised Indian state, contrasting the natives with the British officials and American missionaries and making a dramatic situation out of a spectacular flood. A readable tale, it showed little understanding of the Indian mentality. Walter Duranty's first novel, *One Life, One Kopeck* (Simon & Schuster) is still best in its reporting; the frightful details of the Bolshevik revolution are exciting reading. Jenny Ballou's *Spanish Prelude* (Houghton, Mifflin) is scarcely a novel at all, though published as such, but rather a witty and skillful record of Spain under the last days of Primo de Rivera, a picturesque and prophetic prelude to Spain of today. Elliot Paul's *The Life and Death of a Spanish Town* (Random House) makes no pretense to being a novel, and yet it might be mentioned here as a better sort of fiction than the average novel, a poet's memory of the little town of Santa

Eulalia before the Italians marched in.

AMERICANS AT HOME

Under this title may be grouped several favourites of the year from one State and another. The outstanding success was John Steinbeck's shortish novel, *Of Mice and Men* (Covici-Friede), more recently dramatised by the author into a Broadway hit. It is the story of two drifting characters from the South who find work on a California ranch, a story that ends in the shooting of one by the other, but told with so baffling a combination of tenderness and realistic logic that it eludes classification. Written technically as a novel that might be played, or a play that might be read, it has achieved success in both forms.

Another popular novel, about to be turned into a play by Paul Osborn, author of *The Vinegar Tree*, is Lawrence Edward Watkin's *On Borrowed Time* (Knopf), a whimsical novel in folk dialect of Death being held in an apple tree until Grandpa's grandson should grow up. Millen Brand's *The Outward Room* (Simon & Schuster), a first novel about a girl who escapes from an asylum to find love and sanity in New York, was much praised for its promise. William Maxwell's second novel, *They Came Like Swallows* (Harper) is a charming, delicate story of an Illinois family. Dan Wickenden's *The Running of the Deer* (Morrow) is a first and pleasant family novel of Long Island suburbanites. Paul Horgan's *A Lamp on the Plains* (Harper), a novel of adolescence in New Mexico, makes a further advance in his mastery of the novel. *Smire* (Garden City) ended Branch Cabell's trilogy of modern life, generally felt to be disappointing. Gladys Hasty Carroll added *Neighbor to the Sky* (Macmillan), a Maine story. The best of the few distinctively regional novels was Lyle Saxon's *Children of Strangers* (Houghton, Mifflin), of the Louisiana Creole mulattoes living off Isle Brevelle. Josephine Johnson's *Jordantown* (Simon & Schuster) is a strong novel of social injustice in a midwestern town.

White Mule (Norfolk: New Directions) by William Carlos Williams, the poet, is a fresh and perceptive novel of unusual quality dealing with an immigrant middle-class family in New York around the turn of the century, evidently to be continued and likely to become an important work.

One of the most engaging books of the year was Leonard Q. Ross's *The Education of H*y*m*a n K*a*p*l*a*n* (Harcourt, Brace), the struggles of an immigrant with the American language, a book of real distinction, being as funny as it is veracious. Gene Fowler invents more of his lusty uproarious Rocky Mountain characters in *Salute to Yesterday* (Random House). Myron Brinnig in *The Sisters* (Farrar & Rinehart) does an old-fashioned piece (pre-war) of three sisters in Montana.

DJUNA BARNES

The most curiously interesting book of the year, not a best seller, was Miss Barnes's *Nightwood* (Harcourt, Brace). Miss Barnes has been writing for some years with an uncompromising excellence of style, and in *Nightwood*, which received the unusual distinction of an introduction by T. S. Eliot, she has best expressed her parable of the psychosis of modern sex life in a novel of mixed French, English and American influences that could not be satisfactorily realised by any one alone.

BRITISH FICTION

Virginia Woolf in *The Years* (Harcourt, Brace) made a popular success with what is probably her most representative novel, a chronicle of upper-class English society from the late Victorians to the latest and brightest Georgians. A. J. Cronyn's *The Citadel* (Little, Brown), a popular and provocative novel, combined a success story with a plea for medical co-operation. Liam O'Flaherty's *Famine* (Random House), a novel of the Forties in Ireland, is his most serious and restrained work. In *The Turning Wheels* (Houghton, Mifflin)

Stuart Cloete pictured the Great Trek of the Boers in South Africa. H. G. Wells in *The Shaw of Things* (Scribner) turned to his earlier style of novel-writing. Somerset Maugham made a slick tale in *Theatre* (Doubleday, Doran) and James Hilton continued his sentimental journey in *We Are Not Alone* (Little, Brown). Robert Briffault continued his *Europa* with *Europa in Limbo* (Scribner) with little critical commendation. Ralph Bates writes an unusually fine tale in *Rainbow Fish* (Dutton). The first novel to come from the Cambridge University Press was an historical novel of the Italian sixteenth century, *A Cardinal of the Medici* (Macmillan) by Mrs. Hicks Beach. Ann Bridge's *Enchanter's Nightshade* (Little, Brown) is a pleasant period piece of pre-war Italy. The most popular of the English historical novels was *And So—Victoria* (Macmillan) by Vaughan Williams, critically damned as the worst book of the year. The most distinguished newcomer was Eric Knight's first, *Song on Your Bugles* (Harper), humorous, vigorous and realistic.

TRANSLATIONS

Belonging equally to America and Finland is the translation from Sally Salminen's *Katrina* (Farrar & Rinehart), the novel which won the Helsingfors Prize, written by a Finnish girl who came to America in 1930 and worked for five years as a domestic servant. It is a tale of the bleaker side of Finland, with some social protest, but warm and courageous. From the German of the deceased Franz Kafka comes another amazing masterpiece of cryptic writing in *The Trial* (Knopf). Sigrid Undset writes of modern Norway in *The Faithful Wife* (Knopf). Heinrich Mann turns to historical fiction in *Young Henry of Navarre* (Knopf), a novel of the Huguenots and the Massacre of St. Bartholomew. Erich Maria Remarque's *Three Comrades* (Little, Brown) was compared with Hemingway's *A Farewell to Arms,* and held to be a more compassionate book.

A revealing account of the underground movement against Fascism is found in Ignazio Silone's *Bread and Wine* (Harper). Maxence van der Meersch's *Invasion* (Viking) recalled the plight of the French and Belgian civilian population during the war. An "All-Nations Prize Novel Competition" was won by Jolan Foldes's *The Street of the Fishing Cat* (Farrar & Rinehart), a Hungarian novel of exiles in Paris too anxious to please. The National Prize of Literature in Mexico went to *El Indio* (Bobbs-Merrill) by Gregorio Lopez y Fuentes, illustrated by Diego Rivera, for a well-constructed fusion of folk tale and allegory of characteristic Indian life. *The Bridal Canopy* (Doubleday, Doran) is a well-known classic of modern Hebrew literature, for the first time translated into English.

In *The Heights and the Depths* (Knopf), Jules Romains completes the sixth volume of his *Men of Good Will. The Wheel Turns* (Putnam) is from the prolific pen of Gian Dauli, who has been called the Italian Zola, Dostoievsky, and Galsworthy. Jean Giono's *The Song of the World* (Viking) is a wild, fantastic, and remarkable novel of primitive peasant life in the Basses-Alpes.

THE SHORT STORY AND "NOVELLA"

An attempt to revive the novelette, or long short story, or short novel, under the term, "novella," has been made by the editors of *Story Magazine.*

Little, Brown awarded a $2,500 prize in a short-novel contest to Wallace Stegner's *Remembering Laughter,* a story of rural Iowa in the early days of the century by a new writer, whose theme has been compared with *Ethan Frome.*

The O. Henry Collection (Doubleday, Doran), under the editorship of Harry Hanson and with Herschel Brickell, Lewis Gannett, and Robert Van Gelder as judges, gave their votes, first, to Stephen Vincent Benét's *The Devil and Daniel Webster;* second, to Elick Moll's *To Those Who Wait;* and, third, to Robert M. Coates's *The Fury.*

Thomas Wolfe's *I Have a Thing to Tell You,* serialized in *The New Republic* (March), a long short story of Nazi Germany, not yet in book form, should be mentioned here. Stephen Vincent Benét's first collection of short stories, *Thirteen O'Clock* (Farrar & Rinehart) contains his famous "The Devil, etc." William Saroyan's *Three Times Three* (Los Angeles: The Conference Press) continues this wayward writer's notes and impressions. John Steinbeck's *The Red Pony* (Covici-Friede) has three stories dealing with a ten-year old boy. *All Good Americans* (Scribner) is a first book of stories by Jerome Bahr of Wisconsin with a preface by Ernest Hemingway. Leane Zugsmith's *Home is Where You Hang Your Childhood* (Random House) is a useful piece of realism. James T. Farrell's *Can All This Grandeur Perish?* (Vanguard) contains 17 stories of his Chicago Irish adolescents, realistic as his novels, and probably in part sketches for them.

Carl Carmer's *The Hurricane's Children: Tales From Your Neck o' the Woods* (Farrar & Rinehart—December), told first over the radio, is an excellent example of what can be done by broadcasting the legends and the folk-tales of the various States. A new edition of Katherine Mansfield's *Short Stories,* with a preface by John Middleton Murry, was published by Knopf.

NEGRO FICTION

Two exceptional Negro novels should be mentioned: Zora Neale Hurston's *Their Eyes Were Watching God* (Lippincott), a dialect story from the Florida Glades, and Waters Edward Turpin's *These Low Grounds* (Harper), realistic sketches of four generations from slavery to the present day.

POETRY

By Peter Monro Jack

Critic and Lecturer

EDNA ST. V. MILLAY

In an unusually thin year for Poetry, the most interesting and considerable book was Miss Millay's *Conversation at Midnight* (Harper). This marks an important change in her style and attitude, and it was liked or disliked according to whether one preferred the neater formalism of her early poems. In a mixture of free verse, quatrains, sonnets, and pastiche, Miss Millay records in a dramatic form the conversation on political and social matters by various contemporary types—priest, poet, painter, stock-broker, and man of the world. The poem comes to no conclusion, but it is exciting and at times beautiful and moving writing, and at all times on a high level of interest. Miss Millay's growing absorption in types and creeds beyond her earlier personality is to the good.

EZRA POUND

The Fifth Decade of Cantos (Farrar & Rinehart) continues on its way to the promised hundred. Admittedly a difficult poem because of its dissociation of theme, its scrambling of time from Greece to Colonial American to the present day, and its use of various languages, it is obviously written by one of the most distinguished technicians of today. The theme is *usura,* its beginnings and corruptions, and from Italy to America, Pound shows the insidious growth of economic materialism, with lovely descants on a simpler and more sensible existence.

ROBINSON JEFFERS

Such Councils You Gave to Me (Random House) is based on an old ballad and is brought up to date to become a sort of omnibus for all the

vices and diseases of modern society. Another tale of incest in Jeffers's curious California, it is more violent, tortured, confused, and jargonistic than ever before. The characters are symbols of Jeffers's restless energy and neurotic despair. Shorter poems on the permanence of rocks, seas and predatory hawks are clearly and strongly stated.

WALLACE STEVENS

The Man with the Blue Guitar (Knopf) is an advance in this poet's difficult progress from aesthetic to reality. Always one of the best technicians in American poetry, he is now finding themes that allow him more scope for feeling and expression.

LOUISE BOGAN

The Sleeping Fury (Scribner) preserves Miss Bogan's integrity as a poet of sharp mentality who symbolises emotions into hard and lasting images. Metaphysical vision is joined to an acute awareness of concrete objects, and, though there are influences, there is an original impulse in her poems.

MARK VAN DOREN

In *The Last Look* (Holt) Van Doren is particularly interested in specific phases, episodes, and scenes of the American character. An admirable writer, he proceeds by suggestion and indirection, a blend of realism with romantic overtones.

GENEVIEVE TAGGARD

In *Calling Western Union* (Harper) Miss Taggard continues in her effort to make her poetry appeal to the working classes, following proletarian theory. The effort is not yet successful.

ROBERT HILLYER

A Letter to Robert Frost (Knopf) includes also letters in verse to Charles Townsend Copeland, Bernard De Voto, and others, affectionate or satirical, depending on whether the addressee is conservative like himself, or adventurous.

ROBERT P. TRISTRAM COFFIN

In *Saltwater Farm* (Macmillan) Mr. Coffin writes simple and homely pieces on Maine scenery and Maine characters, a regional verse of much kindliness as well as some saltiness.

COLLECTIONS AND SELECTIONS

The *Collected Poems* of Sara Teasdale (Macmillan) show how her artistry matured toward the end. A *Selection* from three of Allen Tate's earlier books (Scribner) contains the best of this intellectual and constricted Southern poet's work. The *Collected Poems* of James Joyce (Viking) contains the small, delicate lyrical output of this gargantuan novelist. Macmillan publishes the *Collected Poems* of the Indian mystic, Rabindranath Tagore. Padraic Colum introduces the *Collected Poems of* the Anglo-Irish poet, Austin Clark (Macmillan), mainly from the old cycles of Irish romance. Edith Sitwell, first of the English experimenters in new rhythms and a very excellent one, has selected her best poems (Houghton, Mifflin) with a long and meticulous essay on her understanding of poetry.

POETIC DRAMA

The most interesting poetic experiment of the year was Archibald MacLeish's *The Fall of the City* (Farrar & Rinehart), written for radio voices (Burgess Meredith and Orson Welles) and broadcast by NBC. Marred somewhat by literary archaism, it is a brilliant piece of dramatic writing in verse, inaugurating a new form in spoken poetry. *The Assent of F6,* by the English poet, W. H. Auden (Random House), performed by the Yale students' workshop, is a symbolistic drama, also anti-Fascist, like MacLeish's, the clearest and best he has done.

The interest in poetic drama has led to many translations, the best of which are: The *Alcestis* of Euripides, by Dudley Fitts and Robert Fitzgerald, The *Agamemnon* of Aeschylus, by Louis MacNeice (Harcourt, Brace), and the *Ion* of Euripides, by H.D., all by admirable modern poets; and *Three Greek Plays: Prometheus Bound, Agamemnon, The Trojan Women,* a simple and natural translation by Edith Hamilton who has written much on the Greeks.

NEW AND MINOR POETRY

Archibald MacLeish introduced a new and promising poet with *The Island called Pharos* (Liveright) by Archibald Fleming, a poet who follows MacLeish but has a vigour and energy of his own. Ruth Lechlitner's *Tomorrow's Phoenix* (Alcestis Press) made interesting use of symbolism and showed a development in style and contemporary awareness. A new poet, Margaret Haley, showed a promising talent of a metaphysical turn in *The Gardener Mind,* with a preface by Stephen Vincent Benét. Marya Zaturenska chooses a perfect title in *Cold Morning Sky* (Macmillan); her verses are cool, reflective, clear and perceptive. R. P. Blackmur's *From Jordan's Delight* (Arrow Editions) are brittle and often imitative intellectual poems from New England.

The Deer Come Down by Edward Weismiller, printed in The Younger Series of Yale Poets shows talent in nature lyricism. James Still's *Hounds on the Mountains* (Viking) is good indigenous verse of the Alabama Hills. Robert Penn Warren in *Thirty-Six Poems* (Alcestis Press) continues to express the ingrowing esotericism of the South. Lawrence Lee's newer poems in *Monticello and Other Poems* (Scribner) are thoughtfully nostalgic, harking back to the days of Jefferson.

NARRATIVE POETRY

Edgar Lee Masters's *The New World* (Appleton-Century) commemorates American history in anecdotal verse, best on the past, confused with the present. Frances Frost's *Road to America* (Farrar & Rinehart) is a chronicle series of lyrics from 1500 down, recording the conquest of America. There is a section, which is better verse, on the New England landscape. In *People on the Earth* (Random House) Edwin Corle writes authentically and movingly about Indians.

Prelude to Icarus (Farrar & Rinehart) by John Williams Andrews is a saga poem of the Lindbergh of 1927 by an aviator who is a better pilot than poet. *Lawrence, The Last Crusade,* (Viking) is an interpretative narrative, in semidramatic form, of Lawrence of Arabia's life by Selden Rodman. Something of a surprise was the admirable verse of Josephine Johnson, the gifted novelist, in *Year's End* (Simon & Schuster), personal and narrative poems, best when telling a story, showing a strong revolutionary urge.

ANTHOLOGIES

A novel idea was *The Desk Drawer Anthology,* selected and compiled by Alice Roosevelt Longworth and Theodore Roosevelt, subtitled *Poems for the American People.* There are 400 of these, sent in at Alexander Woollcott's invitation over the radio. They are generally very bad. Yvor Winters edits *Twelve Poets of the Pacific* (Norfolk, Conn.: New Directions), a somewhat fortuitous collection from Stanford University. Thomas Moult published his annual selection of the best poems from English and American magazines in *The Best Poems of 1937* (Harcourt Brace).

ENGLISH POETRY

Much the best poetry to come from England was W. H. Auden's *On This Island* (Random House), a further demonstration of this young poet's energy of ideas and originality in verse forms. His verse has not lost its radical force, but it is becoming more controlled and clarified. With Louis MacNeice he published *Letters from Iceland* (Random House), the record of a three months' stay in Iceland written in a mixed form of serious, Byronic, humorous and witty verse and prose, a most original and entertaining book. MacNeice had his first book of poems published this year in America (*Poems*—Random House), revealing a poet of good health and sense already well-matured in verse forms, likely to become a writer of distinction. This group of poets, which includes Spender and Day Lewis, continues to dominate English poetry.

John Masefield's *The Country Scene* (Macmillan) is a series of poems describing, in collaboration with an artist, the English countryside. His

protegé, Laurence Whister, who won the King's Medal for Poetry, has published his third book, *The Emperor Heart* (Macmillan), poems which are by turns charming and complacent.

TRANSLATIONS

Poems from Spain were most immediately interesting and best translated, though the translation is difficult. The best of the Spanish poets, Federico Garcia Lorca, who was killed by the Fascist forces, is represented by the translation of his *Lament for the Death of a Bullfighter* (Oxford) by A. L. Lloyd. M. J. Bernardete and Rolfe Humphries edited translations of 50 Loyalist ballads by E. Millay, George Dillon, W. C. Williams, and others, in . . . *And Spain Sings*. W. B. Yeats turned *The Ten Principal Upanishads* into rhythmic English prose.

HISTORY

By Paul H. Buck

Assistant Professor, Harvard University

TENDENCIES

As the scope of history has steadily widened in recent years historians have shown increasing concern with problems of synthesis and interpretation and the relation of history to other disciplines and fields of knowledge. A fruitful discussion of these problems is found in a group of integrated essays edited by W. E. Lingelbach and published under the title of *Approaches to American Social History* (Appleton-Century). This volume is the outcome of an important session at the annual meeting of the American Historical Association at Providence in December, 1936. The discussion centers about the 12-volume co-operative *History of American Life* (Macmillan), A. M. Schlesinger and D. R. Fox, eds., which is scrutinized from the points of view of specialists in the fields of political history, literature and social history.

GENERAL HISTORIES

C. M. Andrews published the third volume of his *The Colonial Period of American History* (Yale), carrying this definitive study of institutions to the close of the seventeenth century. W. E. Dodd, *The Old South: Struggles for Democracy* (Macmillan), deals with the history of the Southern colonies to the year 1690 and is the first of four projected volumes on the history of the South to 1865. The fifth and final volume of E. P. Oberholtzer, *A History of the United States since the Civil War* (Macmillan), was published after the author's death and covers the years from 1888 to 1901.

PERIOD HISTORIES

Several books of merit dealt with the era of the Civil War and its aftermath. J. G. Randall, *The Civil War and Reconstruction* (Heath), is a masterly synthesis. C. R. Fish, *The American Civil War* (Longmans, Green), published posthumously under the editorship of W. E. Smith, is the mature reflection of a scholar who devoted much of his life to a study of the struggle between the North and South. J. S. Allen, *The Reconstruction Period* (International), attempts to interpret this phase of American history from a Marxian point of view. R. S. Henry, *The Story of Reconstruction* (Bobbs-Merrill), is a general narrative with little originality or depth. O. Eisenschiml, *Why Was Lincoln Murdered?* (Little, Brown), presents a novel and challenging thesis based upon extensive and intelligent research. P. H. Buck, *The Road to Reunion 1865–1900* (Little, Brown), deals with a broad variety of themes relating to the process which restored to a divided country a feeling of national unity. D. L. Dumond, *Roosevelt to Roosevelt* (Holt), breaks new ground and contains much val-

uable detail but gives evidence of hasty composition.

CONSTITUTIONAL HISTORY

The study of constitutional history so much in vogue a generation ago has been somewhat neglected in recent years. It is, therefore, perhaps significant that the American Historical Association, in its annual meeting at Philadelphia in December, 1937, observed the sesquicentennial of the framing of the Constitution by devoting its entire program to papers discussing topics relating to the Constitution. Meanwhile popular interest in the political struggles over constitutional issues continued to bring forth a number of books written to inform the general reader. The best of these are D. Alfange, *The Supreme Court and the National Will* (Doubleday, Doran), and B. J. Hendrick, *Bulwark of the Republic, A Biography of the Constitution* (Little, Brown). E. R. Lewis, *A History of American Political Thought from the Civil War to the World War* (Macmillan), is scholarly and conventional.

DIPLOMATIC HISTORY

In the field of diplomatic history publication was characterized by no work of general scope but by a large number of monographs. Each of the following books adds something to the specialist's knowledge: J. M. Callahan, *American Foreign Policy in Canadian Relations* (Macmillan); F. R. Dulles, *Forty Years of American-Japanese Relations* (Appleton-Century); V. J. Farrar, *The Annexation of Russian America to the United States* (Roberts); R. D. Gregg, *The Influence of Border Troubles on Relations between the United States and Mexico, 1878–1914* (Johns Hopkins); C. C. Griffin, *The United States and the Disruption of the Spanish Empire* (Columbia); D. C. Masters, *The Reciprocity Treaty of 1854* (Longmans, Green); W. D. McKain, *The United States and the Republic of Panama* (Duke); S. T. Moore, *America and the World War* (Greenberg); H. Notter, *The Origins of the Foreign Policy of Woodrow Wilson* (Johns Hopkins); V. G. Settler, *The Commercial Reciprocity Treaty Policy of the United States, 1774–1829* (Pennsylvania); J. T. Shotwell, *At the Paris Peace Conference* (Macmillan); I. I. Strakhovsky, *The Origins of American Intervention in North Russia* (Princeton); and E. Tupper and G. E. McReynolds, *Japan in American Public Opinion* (Macmillan).

MILITARY HISTORY

O. L. Spaulding, *The United States Army in War and Peace* (Putnam) is an excellent one-volume study.

SOCIAL HISTORY

A. Deutsch, *The Mentally Ill in America* (Doubleday, Doran), is a valuable contribution to the history of psychiatry in the United States. G. W. Johnson, F. R. Kent, H. L. Mencken, and H. Owens, *The Sun Papers of Baltimore* (Knopf), is a welcome addition to the important subject of the history of journalism. D. Wecter, *The Saga of American Society, 1607–1937* (Scribner), is a colorful chronicle of the pastimes and aspirations of aristocrats and near-aristocrats. W. C. Langdon, *Everyday Things in American Life: 1607–1776* (Scribner), describes home-making customs of colonial days. E. V. Mitchell, *The Horse and Buggy Age in New England* (Coward-McCann) is an informal and entertaining record. E. R. Groves, *The American Woman* (Greenberg), treats in outline a large theme. B. W. Doyle, *The Etiquette of Race Relations in the South* (Chicago), is a historical analysis. D. M. McNicol, *The Amerindians* (Stokes), surveys the Indian "from Columbus to Sitting Bull." G. E. Hyde, *Red Cloud's Folk* (Oklahoma), is a history of the Oglala Sioux.

Various phases of religious life are treated in S. P. Abelow, *History of Brooklyn Jewry* (Brooklyn: Scheba); E. J. Goebel, *A Study of Catholic Secondary Education during the Colonial Period* (New York: Benziger); M. L. Gambrell, *Ministerial Training in Eighteenth Century New England* (Columbia); G. S. Klett, *Presbyterians in Colonial Pennsylvania* (Pennsylvania); and J. C.

Wenger, *History of the Mennonites of the Franconia Conference* (Telford, Pa.: Franconia Mennonite Historical Society).

FRONTIER THEMES

T. P. Abernethy, *Western Lands and the American Revolution* (Appleton-Century), is a competent work of scholarship. E. Dick, *The Sod-House Frontier, 1854–1890* (Appleton-Century), amasses a large amount of picturesque detail. Books of minor scope are S. P. Ridings, *The Chisholm Trail* (Guthrie, Okla.: Co-operative Publishing Co.); M. Haiman, *Polish Pioneers of Virginia and Kentucky* (Polish Roman Catholic Union of America); and C. D. Schreibeis, *Pioneer Education in the Pacific Northwest* (Portland, Ore.: Metropolitan).

COLONIAL HISTORY

Books dealing with the colonial period include S. H. Sutherland, *Population Distribution in Colonial America* (Columbia); W. A. Knittle, *Early Eighteenth Century Palatine Emigration* (Dorrance); S. G. Nissenson, *The Patroon's Domain* (Columbia); and W. I. Hull, *William Penn and the Dutch Quaker Migration to Pennsylvania* (Swarthmore). J. Hardy, *The First American Revolution* (International), is a Marxian interpretation.

HISTORIOGRAPHY

American historiography is studied in M. Kraus, *A History of American History* (Farrar and Rinehart), and W. T. Hutchinson, ed., *Essays in American Historiography* (Chicago).

STATE HISTORY

G. G. Johnson, *Ante Bellum North Carolina* (North Carolina) is an excellent portraiture of all aspects of North Carolina society in the period from 1800 to 1860. M. P. Andrews, *Virginia: The Old Dominion* (Doubleday, Doran), is a well written narrative. T. D. Clark, *A History of Kentucky* (Prentice Hall), is an accurate survey.

LOCAL HISTORY

B. L. Pierce, *A History of Chicago*, vol. 1, *The Beginning of a City, 1673–1848* (Knopf), is the first of four projected volumes that promise to be an outstanding achievement. H. C. Parsons, *A Puritan Outpost* (Macmillan), relates the history of Northfield, Mass., in a manner to command far more than local interest. J. D. Phelps, *Salem in the Eighteenth Century* (Houghton, Mifflin), is a worthy companion volume to the same author's *Salem in the Seventeenth Century*. Other local histories are L. D. Baldwin, *Pittsburgh* (Univ. of Pittsburgh); E. E. Calkins, *They Broke the Prairie* (Scribner); W. O. Stevens, *Annapolis* (Dodd, Mead); and R. F. Yancey, *Lynchburg and its Neighbors* (Fergusson).

EUROPE

In other fields of history American scholars demonstrated a wide range of interest. H. E. Barnes, *An Intellectual and Cultural History of the Western World* (Random House), is a broad comprehensive survey. R. Lewinsohn, *The Profits of War* (Dutton), and E. E. Kellett, *The Story of Dictatorship from the Earliest Times Till Today* (Dutton), are sweeping surveys. K. S. Latourette, *A History of the Expansion of Christianity* (Harper), is the first of six projected volumes.

T. Frank, ed., *An Economic Survey of Ancient Rome*, vol. 3 (Johns Hopkins) is a co-operative study of the Roman provinces. Studies of the Middle Ages are S. Katz, *The Jews in the Visigothic Kingdoms of Spain and Gaul* (Medieval Academy of America); R. L. Kilgour, *The Decline of Chivalry* (Harvard); and C. O. Williams, *Thraldom in Ancient Ireland* (Chicago).

Various phases of modern European history were treated in W. O. Aydelotte, *Bismarck and British Colonial Policy* (Pennsylvania); J. H. Brady, *Rome and the Neapolitan Revolution of 1820–21* (Columbia); S. W. Halperin, *The Separation of Church and State in Italian Thought from Cavour to Mussolini* (Chicago); N. E. Hudson, *Ultra-Royalism and the French Restoration* (Macmillan); F. Jellinek, *The Paris Commune of 1871* (Oxford); S. Kent, *Electoral Procedure under Louis Philippe* (Yale); S. MacCoby, *English Radical-*

ism, 1832–1852 (Chicago); A. G. Mazour, *The First Russian Revolution of 1825* (California); D. McKay, ed., *The Dreyfus Case* (Yale); N. Riches, *The Agricultural Revolution in Norfolk* (North Carolina); B. E. Schmidt, *The Annexation of Bosnia* (Macmillan); W. W. White, *The Process of Change in the Ottoman Empire* (Chicago); and F. T. Williamson, *Germany and Morocco Before 1905* (Johns Hopkins).

ASIA

P. K. Hitti, *History of the Arabs* (Macmillan), is a work of erudition and understanding. W. C. Costen *Great Britain and China, 1833–1860* (Oxford), is a diplomatic study.

SOUTH AMERICA

B. Niles, *Peruvian Pageants* (Bobbs, Merrill), and R. Levene, *A History of Argentina* (North Carolina), are general surveys.

BIOGRAPHY

By Malcolm Oakman Young

Reference Librarian, Princeton University

GENERAL

"Biography is one of the surest ways of bringing the past to life," says George Dangerfield in an article entitled "The Insistent Past" in the *North American Review* of March, 1937. Among the books he mentions in this survey is Allan Nevins's *Hamilton Fish*, the Pulitzer prize winner of 1937 in biography. This is the second time that Nevins has won the prize. Another event worth recording is the completion, late in 1936, of the *Dictionary of American Biography*. The United States now has a biographical dictionary of which it may be proud, and which deserves supplementary volumes. A critical survey of biography written in English, and one including many quotations from these works is Edgar Johnson's *One Mighty Torrent, the Drama of Biography* (N.Y., Stackpole).

COLLECTIVE

Prof. Eric T. Bell has told in *Men of Mathematics* (Simon and Schuster) the lives and deeds of great mathematicians from Zeno to Poincaré and Cantor. Accounts of Franklin, Joseph Henry, J. W. Gibbs and Edison are in J. G. Crowther's *Famous American Men of Science* (Norton). "Pioneers of American Medicine" is the sub-title of James T. Flexner's *Doctors on Horseback* (Viking). *General Washington's Son of Israel*, by Charles S. Hart, includes sketches of Haym Salomon, and other little known figures in history (Lippincott). Ferdinand Lundberg, in *America's Sixty Families* (Vanguard) finds little to praise among those who have accomplished most materially. Somewhat different in attitude is Harvey O'Connor's *The Guggenheims* (N.Y., Covici-Friede). A third useful reference book within one field by David Ewen is his *Twentieth Century Composers* (Crowell).

THE PRESIDENTS

The Presidents are somewhat neglected in the year's writings. Marquis James's *Andrew Jackson; Portrait of a President* (Bobbs, Merrill) completes his two-volume biography, an outstanding one. One giving light on individuals and period is Mary F. Caldwell's *General Jackson's Lady* (Nashville, Ladies' Hermitage Association), and William Baringer's *Lincoln's Rise to Power* (Little, Brown) is a well done treatment up to November, 1860. A provocative work is *Why was Lincoln Murdered?* (Little, Brown), written by Otto Eisenschiml. A book especially valuable to the historian is volume six of Ray Stannard Baker's *Woodrow Wilson* (Doubleday), entitled *Facing the War*, 1915–1917. Eleanor Wilson McAdoo, the President's daughter, has pictured the whole family in *The*

Woodrow Wilsons (Macmillan). Perhaps here should be mentioned Eleanor Roosevelt's *This is My Story* (Harper), although the narrative stops in the 1920's.

MEN OF PUBLIC AFFAIRS

As a source book for the life of William Penn, William I. Hull has compiled a useful "topical biography" (Oxford). The South before and during the Civil War is the background for James B. Ranck's *Albert Gallatin Brown* (Appleton-Century), the subject having been governor of Mississippi and congressman. The Puritan governor, John Endecott, is the subject of a study by Lawrence S. Mayo (Harvard Univ. Press). For students of constitutional history two books have appeared giving sidelights: *John Langdon of New Hampshire,* by Lawrence S. Mayo (Concord, N.H., Rumford Press), and *William Samuel Johnson,* by George C. Groce, Jr. (Columbia Univ. Press).

Two books, with acclaims for each, have appeared with Aaron Burr as subject, one by Holmes Alexander (Harper) and one by Nathan Schachner (Stokes). Also, for students of the man and period, Samuel H. Wandell produced *Aaron Burr in Literature* (Barnes and Noble), a compilation of references and lengthy quotations. Henry Clay has likewise been the subject of two works, one by Glyndon G. Van Deusen (Little, Brown) in one volume, and one, the first of three volumes, is called *Henry Clay, Spokesman of the New West* (Houghton, Mifflin). Thomas F. Wooley's *Great Leveler* (N. Y., Stackpole) is the story of Thaddeus Stevens. A pleasant autobiographical volume is former Secretary of Commerce Charles Nagel's *A Boy's Civil War Story* (Dorrance). The Union war governor and "father" of West Virginia, Francis H. Pierpont, is portrayed, with his times, by Charles H. Ambler (Univ. of North Carolina Press). One of the more notable books is Robert McElroy's two-volume *Jefferson Davis* (Harper). Several recent or living politicians form subjects of biographies: Robert D. Bowden sub-titles his life of Boies Penrose, *Symbol of an Era* (Greenberg), while the title of a work by Richard L. Neuberger and Stephen B. Kahn is *Integrity, a Life of George W. Norris* (Vanguard). Alex M. Arnett has given us light on Wilson war policies in his *Claude Kitchin* (Little, Brown). *A Maverick American* (Covici Friede) is Maury Maverick's autobiography. David Bryn-Jones's *Frank B. Kellogg* (Putnam) portrays a life of varied activities. A small volume appearing in October was Jay Franklin's *La Guardia* (N.Y., Modern Age Books) giving us our first complete work on New York's Mayor.

MEN OF ACTION

Neil H. Swanson, the excellent writer of historical novels, has written in fictional form, the biography of James Smith, hero of the early Pennsylvania uprising against the English in the 1760's, under the title *The First Rebel* (Farrar). General von Steuben of Revolutionary fame is the subject of a book by John McAuley Palmer (Yale Press). Students of the American navy in the first half of the 19th century will find help in Carroll S. Alden's *Lawrence Kearny, Sailor Diplomat* (Princeton Univ. Press). Thomas Kearny is author of *General Philip Kearny, Battle Soldier of Five Wars* (Putnam). General Winfield Scott is subject of two books, one by Charles W. Elliott (Macmillan), the other, entitled *Old Fuss and Feathers* (N.Y., Greystone) by Arthur D. H. Smith. The naval hero of the War of 1812, Decatur, is studied by Charles Lee Lewis (Univ. of Penn. Press), while the Civil War Admiral David Dixon Porter is portrayed by Richard S. West, Jr. (Coward-McCann).

LEADERS OF THE SPIRIT

Friend Anthony Benezet is the life of the 18th century humanitarian, by George S. Brooks (Univ. of Penn. Press), *Pedlar's Progress* (Little, Brown) is an important work, the life of the visionary Bronson Alcott. The first American foreign missionary, Adoniram Judson, is the hero of *Eastward!* (N.Y., Round Table) by

Stacy R. Warburton. The Quakeress worker for women's rights, Lucretia Mott, is the subject of a book by Lloyd C. M. Hare (N.Y., American Historical Soc.), and the early instigator of reform in the care of the insane and criminal, Dorothea Dix, has a biography with the appropriate sub-title, *Forgotten Samaritan,* written by Helen E. Marshall (Univ. of North Carolina Press). Frank H. Foster has produced the life of Edwards Amasa Park, the 19th century theologian (Revell). William Z. Foster, from the extreme left wing, has given an autobiographical volume *From Bryan to Stalin* (N.Y., International). A second biography of the subject appears in Robert Parker's *The Incredible Messiah, the Deification of Father Divine* (Little, Brown).

THE LITERARY WORLD

This field is not well represented. One of the earlier subjects and at the same time one of the better books is *Harriet Beecher Stowe* (Appleton-Century) by Catherine H. Gilbertson. Harvey C. Minnich has written *William Holmes McGuffy and his Readers* (American Book Co.), while the same publishers have put out a volume of selections from these famous readers. Edgar Lee Masters wrote a volume on Walt Whitman (N.Y., Scribner) and Martin S. Peterson wrote *Joaquin Miller, Literary Frontiersman* (Stanford Univ. Press). A small volume giving insight into Edwin Arlington Robinson is Rollin W. Brown's *Next Door to a Poet* (Appleton-Century). A difficult subject, the late young poet Hart Crane, is portrayed by Philip Horton (Norton). The autobiographical *On Journey* (N.Y., Dutton) is by Vida Scudder, teacher, writer, thinker. Mark A. De Wolfe Howe has written *John Jay Chapman and his Letters* (Houghton Mifflin), a compilation of letters and biography setting forth a comparatively little known but brilliant figure. Three autobiographical volumes are *Before I Forget* (Doubleday) by Burton Rascoe, critic and editor; *Life is my Song* (Farrar) by the poet John Gould Fletcher; and *Yankee Bookseller* (Houghton Mifflin), by Charles Goodspeed, the well known Bostonian.

JOURNALISTS

Although active as lawyer and playwright, Mordecai Noah was an early and prominent newspaperman, and his biography by Isaac Goldberg is called *Meyer Noah, American-Jewish Pioneer* (Knopf). Alexander Black's *Time and Chance* (Farrar) is a pleasant autobiographical volume, full of anecdotes, by one of the older journalists of the present. Oliver Carlson's *Brisbane: a Candid Biography* (N.Y. Stackpole), of course includes also sidelights on Hearst. William Allen White calls his autobiography *Forty Years on Main Street* (Farrar). A Saint Louis journalist, George Johns and his son appear in Orrick Johns' *Time of Our Lives: the Story of My Father and Myself* (N.Y., Stackpole) *James Keeley, Newspaperman* (Bobbs Merrill), is by James W. Linn. To be placed here, also, is *Blood on the Moon,* a stirring volume by Linton Wells, foreign correspondent.

MEN OF BUSINESS

A biography by James A. James, *Oliver Pollock: the Life and Times of an Unknown Patriot* (Appleton-Century) is concerned with the Revolutionary merchant, backer of George Rogers Clark. A valuable work is Kenneth W. Porter's *The Jacksons and the Lees* (Harvard Univ. Press), setting forth two prominent Massachusetts merchant families. The "father of life insurance," Elizur Wright, has as biographers, Philip G. and Elizabeth Q. Wright (Univ. of Chicago Press), William H. Hillyer wrote *James T. Talcott, 19th Century Merchant and his Times* (Scribner), and Henrietta M. Larson wrote *Jay Cooke, Private Banker* (Harvard Univ. Press). Since the death of John D. Rockefeller there has appeared a biographical volume by B. F. Winkelman (Winston).

MISCELLANEOUS BIOGRAPHIES

Captain Kidd heads this group with another biography, this one by Harold T. Wilkins (Liveright). Not long before the reproduction by the Mac-

millan Company of Audubon's bird plates, appeared another and enlightening biography of Audubon by Stanley C. Arthur (New Orleans, Harmanson), the latest in a series of modern interpretations of the character. *The Filibuster* (Bobbs Merrill) by Lawrence Greene is concerned with William Walker, adventurer to Central America. *This One Mad Act: the Unkown Story of John Wilkes Booth and his Family,* by his granddaughter, Izola Forrester (Boston, Hale, Cushman and Flint), adds to the tragic narrative. The picturesque figure, William G. Brownlow, is vividly brought to life in E. Merton Coulter's *Fighting Parson of the Southern Highlands* (Univ. of North Carolina Press), together with the period before, during and after the Civil War. A different sort of person, a leader in agriculture and agricultural education, Thomas Green Clemson, is the subject of a book by A. G. Holmes and G. R. Sherrill (Richmond, Garrett and Massie). The president of Massachusetts Institute of Technology from 1909 to 1920, Richard Cockburn Maclaurin, finds a biographer in Henry G. Pearson (Macmillan). *A Saga of the Sea* (N.Y., Erickson) by P. B. McDonald is the story of Cyrus W. Field and the Atlantic cable. Flannery Lewis' *Suns go Down* is a portrait of the author's grandmother and her life in the early days of the Comstock Lode district. The *Sky Storming Yankee* is Glenn Curtiss, whose biography is by Clara Studer (N.Y., Stackpole). *The Great Goldwyn* (Random House), by Alva Johnston, is the entertaining story of the producer.

AUTOBIOGRAPHIES

The story of a man and of the South since the Civil War is well reflected in Judge Robert W. Winston's *It's a Far Cry* (Holt). Claude McKay's *A Long Way from Home* (N.Y., Furman) is the story of a negro since the World War in literary and labor circles. Harry H. Kroll's *I was a Share Cropper* (Bobbs, Merrill) speaks for itself, as does Evelyn Scott's *Background in Tennessee* (McBride). A pleasant book of memoirs of the McKinley period is Kenneth Horan's *Remember the Day* (Doubleday). A book with description of the Oneida Community is Pierrepont Noyes's *My Father's House* (Farrar and Rinehart). One of the founders and long the head of the Audubon Societies, Thomas G. Pearson, writes his autobiographical *Adventures in Bird Protection* (Appleton-Century). Raymond L. Ditmars writes more reminiscences in *The Making of a Scientist* (MacMillan). An autobiographical self-portrait with the unusual title *To a Lonely Boy* (Doubleday, Doran), is by the producer, Arthur Hopkins. The titles of four other volumes suffice to show their fields: Rosalie S. Morton's *A Woman Surgeon* (Stokes); Col. T. Bentley Mott's *Twenty Years as Military Attaché* (Oxford), Thomas Hart Benton's illustrated *An Artist in America* (McBride), and William A. Brady's *Showman* (Dutton). *Encore,* by Daniel Frohman (N.Y., Furman) continues his reminiscences of the stage and stage people. Carolyn Wells' *The Rest of My Life* (Lippincott) is read with pleasure. *Fifteen-thirty* is the catching title of Helen Wills' autobiography (Scribner). Felix Riesenberg's *Living Again* is the compiled memoirs of traveller and author, while the ever moving E. Alexander Powell, writes in *Free Lance* (Harcourt) of wanderings in every part of the world. A dramatic story is told in Amelia Earhart's *Last Flight* (Harcourt).

FOREIGN SUBJECTS

Alfred H. Bill's *Astrophel* (Farrar and Rinehart) deals with Sir Philip Sidney. One of the most scholarly books of the year is John Bakeless' *Christopher Marlowe* (N.Y., Morrow). A 17th century poet, scientist and divine, Phineas Fletcher, has found a biographer in Abram B. Langdale (Columbia Univ. Press), and the 19th century poet William Collins is studied by Edward G. Ainsworth (Cornell Univ. Press). William Powell Jones includes two hitherto unpublished notebooks in his *Thomas Gray, Scholar* (Harvard Univ. Press). The Irish poet, Thomas Moore, has a biography, appropriately entitled by its author,

Howard Mumford Jones, *The Harp That Once*—(Holt). The second recent narrative of Kipling's Vermont stay is in Frederic F. Van de Water's *Rudyard Kipling's Vermont Feud* (Weston, Vt. Countryman Press).

Melrich V. Rosenberg's *Eleanor of Aquitaine* (Houghton Mifflin); Edwin P. Dargan's *Anatole France* (Oxford), Anne Leslie's *Rodin* (Prentice-Hall), and Richard L. Stokes' *Léon Blum: Poet to Premier* (Coward-McCann) make up a varied French group. Gertrude Slaughter's *Amazing Frederic* (Macmillan) is Frederick II (1194–1250). *Maria Theresa, the Last Conservative* (Knopf) is by Constance L. Morris. Louis Untermeyer, American poet, has translated Heine's poems and in a second volume written the life of the poet (Harcourt). A well received work was O. E. J. Dunlap's *Marconi: the Man and his Wireless* (Macmillan). Ernest J. Simmons' *Pushkin* is a high ranking study (Harvard Univ. Press). The Mexican despot Santa Anna is the subject of a book by Wilfred H. Callcott (Univ. of Oklahoma Press). Caro Lynn gives a detailed study of Lucio Marineo Siculo in *A College Professor of the Renaissance* (Univ. of Chicago Press).

TRAVEL

By Elizabeth T. Platt

American Geographical Society

UNITED STATES

During 1937 much progress was made on the ambitious program of the Federal Writers Project of the Works Progress Administration of the compilation of a series of guide books for the United States. This is of especial interest as adequate guide books for the country have long been needed. It is proposed to issue over 200 volumes, and a goodly number of these are already in print. Volumes are included dealing with States, localities, important cities and regional and interstate tour books. Lack of space prevents listing these but a catalogue is available. A few of the volumes which might be noted are those for the New England States issued by Houghton, Mifflin; *Cape Cod Pilot* (Viking Press); *Chicago; Idaho* (Caxton Printers); *New Orleans; Philadelphia; Savannah; This is New York; U.S. 1; Washington.*

The series "Historic Spots in California" is completed with the third volume *Historic Spots in California —Counties of the Coast Range* (Stanford Univ. Press), by M. B. Hoover. The two earlier volumes are for the Southern Counties, and the Valley and Sierra Counties. Non-official guides for two of the National Parks are Laura Thornborough's *The Great Smoky Mountains* (Crowell) and Margaret Thompson's *High Trails of Glacier National Park* (Caxton Printers, Caldwell, Idaho). There are also *Nantucket, the Far Away Island* (Dodd, Mead) by Wm. O. Stevens and H. B. Hough's *Martha's Vineyard, Summer Resort, 1835–1935* (Tuttle).

For the historical aspects of travel in the United States there were a number of interesting additions during the year. H. R. Wagner produced *Cartography of the Northwest Coast of America to the Year 1800* (Univ. of California Press, 2 vols.) which gives much of the history of the exploration of the west coast. Many maps are reproduced. He has also issued *The Spanish Southwest, 1542–1749: An Annotated Bibliography* (Quivira Society Publ., Vol. 7). Also dealing with the West Coast is Gilbert Chinard's edition of *Le Voyage de Laperouse sur les côtes de l'Alaska et de la Californie (1786)* (Johns Hopkins). The *Journal of Rudolph Friedrich Kurz: An Account of His Experiences among Fur Traders and American Indians on the Mississippi and the Upper Missouri Rivers during the Years 1846 to 1852* (Bureau of American Ethnology Publ. 115) also ought to be noted. Karl Sundheim's

The Romance of Exploration: How Man Has Opened up His World (Hillman Curl) is a general survey of the field.

MEXICO AND CENTRAL AMERICA

The experiences and adventures encountered in following jungle trails for 40 years are told by A. Hyatt Verrill in *My Jungle Trails: A Narrative of Adventures in the Jungles of Central and South America, and the West Indies; of Strange Indian Tribes, and their Curious Customs, the Flora and Fauna of the Countries and Incidents both Exciting and Humorous.* (Page.) Erna Ferguson, author of *Fiesta in Mexico* gives her impressions and observations of the life and historical background of Guatemala in *Guatemala* (Knopf). The story of the Wilson Popenoe house in Antigua—its restoration and its background which involves much of the local history—has been told by Louis Adamic in *The House in Antigua: A Restoration* (Harper). Michael and Virginia Scully have produced an *Official Motorists' Guide to Mexico (Pan American Highway).* (Rev. ed. 1937. Turner, Dallas, Tex.) Hudson Strode's vivid impressions of South America are to be found in *South by Thunderbird* (Random House).

WEST INDIES

A protest against what the author considers earlier misrepresentations of Haitian culture is Melville J. Herskovits' *Life in a Haitian Valley* (Knopf). It is based on the Columbia-Northwestern Universities' Expedition to Haiti in 1934. Desmond Holdridge's *Escape to the Tropics* (Harcourt, Brace) is a story of the life of the author and his wife on St. John in the Virgin Islands. It tells of his adventures on an expedition into the Guiana jungles in search of Redfern. Hendrik de Leeuw gives an account of the Leeward and Windward Islands in *Crossroads of the Buccaneers* (Lippincott). Informal and informative glimpses gained on a circuit of the American Mediterranean in a two and one-half months trip are given by Tom Marvel in *Circling the Caribbean* (Harcourt, Brace).

EUROPE

An informal account of a Japanese view of Europe is *Japanese Lady in Europe* (Dutton), by Haruko Ichikawa. In *King Zog's Albania* (Liveright) J. Swire gives an account of the modern life and developments in this picturesque region. L. A. Boyd's *Polish Countrysides* (American Geographical Society) contains a selection of photographs taken by the author in 1934 to "obtain . . . views of things that are characteristic today but may be gone tomorrow," illustrating "the old rather than the new, the rustic and primitive rather than the urban and cultivated." Agnes Rothery, who has already written of Sweden, Finland, and Guatemala, now tells of *Denmark, Kingdom of Reason* (Viking).

AFRICA

It is rather surprising that so few books on Africa appeared during the year. Knud Holmboe's *Desert Encounter: An Adventurous Journey through Italian Africa* translated from the Danish by Helga Holbek, with an Introduction by J. S. Driberg (Putnam) is a vivid account of a journey through Morocco, Algeria, Tunis, Tripoli, and Cyrenaica with observations on Italian colonial methods in the region. The author who had adopted the Islam faith was murdered by Arabs south of Akaba in 1931. *Three Deserts* (Dutton) is the story of an Arab administrator for eighteen years in the three deserts of Egypt for thirteen of which he was governor of Sinai. It is an account of his wanderings and daily experiences as an administrator. W. K. Gregory and H. C. Raven's *In Quest of Gorillas* (Darwin Press) is the story of an expedition to equatorial Africa under the auspices of the American Museum of Natural History and Columbia University the purpose of which was to collect adult gorillas. The locus of Attilio Gatti's *Great Mother Forest* (Scribner) is the Ituri forest of the Belgian Congo and the main purpose of his travels was the study of the okapi.

ASIA

Sir Aurel Stein's elaborate monograph, *Archaelogical Reconnaissances in Northwestern India and Southeastern Irān Carried Out and Recorded with the Support of Harvard University and the British Museum, Antiques Examined and Described with the Assistance of F. H. Andrews and Analyzed in an Appendix by R. L. Hobson* (Macmillan) records the "explorations mainly archaelogical but intended also to serve geographical interest" carried out during the years 1931–1933. It is of especial interest in its study of the "relation of civilization and intercourse which in prehistoric periods linked the Indus Valley with Iran and the region at the head of the Persian Gulf." Jonathan Cape and Random House have issued a new edition of C. W. Doughty's *Travels in Arabia Deserta* (2 vol.) with T. E. Lawrence's introductory essay. The highest mountain that has yet been climbed to the top is Nanda Devi. H. W. Tilman tells of this climb in *The Ascent of Nanda Devi* (Macmillan). Ella K. Maillart's account of the journey which she and Peter Fleming made from Peking across China, Sinkiang, to Kashgar and Srinigar is now available in English in *Forbidden Journey, From Peking to Kashmir* (Holt). Fleming's story was told in *News from Tartary* (Scribner, 1936). That the lure of Samarkand persists is evident from both Ethel Mannin's *South to Samarkand* (Dutton) and Rosita Forbes' *Forbidden Road—Kabul to Samarkand* (Dutton). H. P. Smolka's *40,000 Against the Arctic: Russian Polar Empire* (Morrow) is an enthusiastic first hand account of the recent economic development of northern Siberia.

THE PACIFIC

The year's publications on the Pacific Islands extend from the Tuamotu Archipelago in the East to Australia and New Guinea. Accompanying the Bernice P. Bishop Museum expedition, Clifford Gessler lived for three months on the atoll of Tepuka in the Tuamoto Archipelago, an island about four and one-half miles long and two wide. A background of 13 years residence in Hawaii and some acquaintance with the Polynesian language were an asset to him in the study of the culture of the island. The title of his book is *Road My Body Goes* (Reynal & Hitchcock). He has also written *Hawaii: Isles of Enchantment* (Appleton-Century).

Tom Harrison's *Savage Civilization* (Knopf) is a pro-native approach to the belief, customs and history of the New Hebrides. The author who went as biologist with an Oxford University expedition remained and lived among the natives of Malekua, studying their culture. John W. Vandercook's *Dark Islands* (Harper) tells of his travels in Fiji, New Guinea and the Solomon Islands. Michael Leahy and Maurice Crain's *The Land That Time Forgot: Adventure and Discoveries in New Guinea* (Funk and Wagnalls) is a tale of the adventures of gold prospecting in the mountains of New Guinea in the region of the headwaters of the Purari and Yuat Rivers. A vivid picture of the gold rush of 1926 is given. In *Primitive Intelligence and Environment* (Macmillan) S. D. Porteus tells of his travels to Central Australia and the Kalahan. This study is primarily "concerned with a comparison of advantages as regards each race habitat [Bushman of South Africa and aborinnes of Central Australia] and by means of the mental test approach [their] social adaptability and educability." Illustrated with many drawings of the author is Miguel Covarrubias' *Island of Bali* (Knopf).

POLAR

Commissioned in 1931 by the government or Norway to accupy Eirik Raude's Land, which in 1933 was decreed Danish territory, Helge Ingstad has given his impressions of the region in *East of the Great Glacier,* translated from the Norwegian by Eugene Gay-Tifft (Knopf). The area is practically that described and photographed by L. A. Boyd in *The Fiord Region of East Greenland* (American Geographical Society, 1936). An American edition of Iosbel Hutchison's *North to the Rime Ringed*

Sun: An Alaskan Journey (Hillman-Curl) now issued is an account of the author's journey made to collect Alaskan plants for the Kew Herbarium and Eskimo material for the Cambridge University Museum of Ethnology. Two tales of northern voyaging are Robert Ferguson's *Arctic Harpooner: A Voyage of the Schooner Abbie Bradford,* edited by L. D. Stair (Univ. of Pennsylvania) and F. W. Wead's *Gales, Ice and Men: A Biography of the Steam Barkentine Bear* (Dodd, Mead). A satirical legend of the Antarctic which has been reprinted is Joseph Hall *The Discovery of a New World (Mundus Alter et Idem) Written Originally in Latin by Joseph Hall, ca. 1605; Englished by John Healey, ca. 1609; ed. by Huntington Brown; with a foreword by R. E. Byrd* (Harvard Univ. Press).

MISCELLANEOUS

Letters which had not come to light when the *Letters of Gertrude Bell* (1927) were published are now to be found in *Earlier Letters of Gertrude Bell: Collected and Edited by Elsa Richmond* (Liveright). In addition to her years at college there are letters from Bucharest, England, and Persia from 1868 up to 1892. Admiral Byrd has brought together his outstanding experiences in his *Exploring with Byrd—Episodes from an Adventurous Life* (Putnam). Seton Dearden has written *Burton of Arabia: The Life Story of Sir Richard Francis Burton* (McBride). And the story of the life of Sir Edgeworth David, geologist in Australia and one of the Shackleton Expedition of 1907 on which he climbed Mt. Erebus and reached the South Magnetic Pole, is told by M. E. Davis in *Professor David* (Longmans, Green). Lawrence Griswold's *Tombs, Travel and Trouble* (Hillman Curl) is a record of an archeologist's experiences.

The story of the tragic flight of Amelia Earhart almost around the world based on her notes and maps and prepared by her husband G. P. Putnam is contained in *"Last Flight"* (Harcourt, Brace). *One Man Caravan* (Harcourt, Brace) is an account of Robert Edison Fulton, Jr.'s motorcycle journey across Europe, through Turkey, the Syrian desert, the Punjab and Kashmir, Afghanistan, from Bombay to Calcutta, thence to Sumatra, Java, Malaya, Siam and China with a 2,000-mile trip into the interior, Japan, and back to the United States.

CRITICISM AND BELLES LETTRES

By Peter Monro Jack

Critic and Lecturer

GENERAL

Literary and critical biography and autobiography are still more common than formal criticism and have appeared in increasing volume. There has been no approach to a school of criticism save for the attempt to establish a modified Marxist system. The essay is more in favour and one is glad to note the enterprise of Professor Walter in issuing an annual collection. But with the brilliant exception of Agnes Repplier, it is still mainly an English form. Criticism becomes increasingly international in scope and interest.

CONTEMPORARY

From These Roots, Mary Colum (Scribner), an admirable description of critical and philosophical ideas underlying modern life and literature from the 18th century of Lessing to our day, suggesting that new critical energy should support emergent literature, particularly in favour of more imaginative and spiritual writing to counteract present decadent realism. *Primitivism and Decadence,* Yvor Winters (Arrow Editions) is a study of American experimental poetry, urging a return to the norm. *The Three Ways of Modern Man,* Harry

Slochower (International) gives the social attitudes of Undset (religious), Mann (liberal), Nexo (proletarian), suggesting the interrelation of the novel with politics, social life, economics. *After the Genteel Tradition,* Ed. Malcolm Cowley (Norton), stemming from Sinclair Lewis's acceptance speech at the Nobel Prize exercises at Stockholm, 1930, in which he summarised present-day American literature evaluates a number of American writers from 1910 who broke with the "genteel tradition." Dreiser by John Chamberlain, Upton Sinclair and Sinclair Lewis by Robert Cantwell, Willa Cather and Eugene O'Neil by Lionel Trilling, Hemingway by John Peale Bishop, Sherwood Anderson by Robert Morse Lovett, The Cabell Period by P. M. Jack, etc. Mr. Cowley's last words may be quoted: "People who had gone through the War and the boom and had watched the growth of a new situation in Russia felt that they had lived in three worlds, and hastened to revalue their own past before it was forgotten."

INDIVIDUAL — AMERICAN

Hart Crane, by Philip Horton (Norton), subtitled *The Life of an American Poet* is the most brilliant piece of critical biography to come from an American contemporary, using Crane as a symbol of the "lost generation" reaching beyond it in aspiration. *Whitman,* by Edgar Lee Masters (Scribner), no new material, is a concentration on the political and prophetic note in Whitman; in effect a plea for more Americanism in poetry and criticism. *Edna St. V. Millay,* by Elizabeth Atkins (Chicago Univ.), is an explanation of the poems in terms of the poet's life in Maine, Vassar and Greenwich Village. *Bibliography* (of E.ST.V.M.) by Karl Kost contains foreword and three poems by Miss Millay. Essay in appreciation is by Harold Lewis Cook. (Harper.) *Edwin Arlington Robinson,* by Rollo Walter Brown, titled *Next Door to a Poet* (Appleton-Century) is a slight sketch of the poet whose neighbour Brown had been at the MacDowell Colony from 1923 till the poet's death. *Bibliography* of the writings and criticisms of E. A. R. is by Walter Lippincott (F. W. Faxon Co.). *Recognition of Robert Frost* (Holt) contains appreciations from well-known writers. *Bibliography* of R. F. is by W. B. Shubrick Clymer and Charles R. Green, foreword by David Lambeth (Amherst, Mass.: The Jones Library).

INDIVIDUAL — ENGLISH

A book of recollection of A. E. Housman is written by Katherine E. Symons, his sister (youth), A. W. Pollard (*A Shropshire Lad* period), Laurence Housman, his brother, R. W. Chambers (London University period), Alan Ker (scholarship), John Sparrow (poetry), A. S. F. Gow (Cambridge University period) (Holt). *An Evening with A. E. Housman* by Cyril Clemens (Mark Twain Society) is a slight sketch, prelude to a contemplated book. *Rudyard Kipling in New England* (Brattlebore, Vt.: The Stephen Daye Press) by Howard C. Rice is a pleasant picture of Kipling's life in Vermont from 1892 to 1896. *Rudyard Kipling's Vermont Feud* by Frederick F. Van de Water tells why Kipling left Vermont over a matter of property. *Something of Myself* (Doubleday, Doran), Kipling's autobiography, was unfinished at his death and on the whole not entirely illuminating. *Memories of John Galsworthy* (Stokes), by M. E. Reynolds, his sister, is pleasantly intimate, with letters from Galsworthy to his family and friends. A *Memoir of AE* (Macmillan), by John Eglington, is a useful and revealing record of the Irish poet George William Russell and of his many American associations. *Letters to Minalabain* (Macmillan) by AE tells of many literary figures in Ireland. A collection of memories of T. E. Laurence by his friends, ed. A. W. Lawrence, has 80 pieces by various authors including Bernard Shaw and E. M. Forster. *George vs. Bernard* (Sheed & Ward) is a study of the two faces in Bernard Shaw's character. *London Music in 1888–1889* (Dodd, Mead), a collection of Shaw's musical criticism under the name of Corno di Bassetto, is interest-

ing critically and autobiographically beyond its musical comment.

NINETEENTH CENTURY

The Letters of William and Dorothy Wordsworth—The Middle Years (Oxford) is arranged and edited by Ernest de Selincourt. *Milton and Wordsworth* (Macmillan) by H. J. C. Grierson, is a study of Wordsworth as poet and prophet compared with Milton. The *Evolution of Keats's Poetry* (Harvard) is by Claude Lee Finney. The *Life of John Keats* (Oxford) by Charles Armitage Brown is a lecture of 1830 by Keats's friend, now first published, ed. by Dorothy Hyde Bodurtha and William Bissell Pope. *John Keats and Fanny Brawne* (Oxford), ed. by Fred Edgecumbe of the Keats Memorial House, Hampstead, contains letters of Fanny Brawne to Fanny Keats (1820–1824), throwing Fanny Brawne's character into a fresh and admirable light. A new study of Edgar Allan Poe is by an English poet and novelist, Edward Shanks (Macmillan). Thoreau's *Works,* selected and edited by Henry Seidel Canby (Houghton, Mifflin) with new material from the *Journals,* is one of the most welcome pieces of scholarship.

Robert Browning and Julia Wedgwood (Stokes) contains the letters that reveal the friendship between these two, three years after Elizabeth Barrett's death, from 1864–1870, and is of literary interest (ed. Richard Curle). *William Morris as I Knew Him* (Dodd, Mead) is an affectionate memory by G. B. Shaw. *The Works of Morris and of Yeats in Relation to Early Saga Literature* (Macmillan), is a scholarly study by Dorothy Hoare, questioning the validity of Morris's translations. *The Earnest Atheist* (Putnam) by Malcolm Muggeridge makes Samuel Butler out to be, not the scourge of the Victorians, but the arch-Victorian; it is bitterly written. *Presbyterian Pirate* (Oxford) by Doris N. Dalglish, revaluates the literary reputation of Robert Louis Stevenson, urging more interest in his serious work in the poems and in *Weir of Hermiston.* Isobel Field, Stevenson's stepdaughter, adds to our knowledge of the novelist and poet in Samoa in her autobiography *This Life I've Loved* (Longmans).

The Goncourt Journals, 1851–70, ed, with notes by Lewis Galantière, are literary portraits of their period in France and critically important. (Doubleday, Doran). Edwin Preston Durgan's *Anatole France, 1844–1896* (Oxford) is an industrious, authoritative study of the influences behind France's literary work. *The Note-Books and Papers of Gerard Manley Hopkins* (Oxford), edited by Humphrey House, is a key to the poetry that has so much influenced contemporary poetry.

THE CRITICAL ESSAY

The late Paul Elmer More's *On Being Human* (New Shelburne Essays No. III, Princeton Univ.), is a mixed study of religion, humanism and naturalism, with essays also on Joyce, Proust and Eliot. George McLean Harper's *Literary Appreciations* (Bobbs-Merrill) concerns, among others, Herbert, Sir Thomas Browne, Scott, Coleridge, Lamb, Wordsworth, William Watson, K. Mansfield. Thomas Mann's lectures delivered at The New School for Social Research are on Freud, Goethe, and Wagner, moving toward an anti-Fascist position (Knopf). Robert Bridges's *Collected Essays, Papers,* etc. (Vols. XXVII–XXX), has been published by the Oxford Press. *Attitudes Toward History* (The New Republic), is made up of integrated, literary and philosophical essays by Kenneth Burke, one of the most subtle of contemporary critics. *Portraits From Life* (Houghton, Mifflin), by Ford Madox Ford, contains portraits of Henry James, Conrad, Stephen Crane, W. H. Hudson, Galsworthy, Wells, Turgeneiv, Swinburne, Hardy, D. H. Lawrence, Dreiser. *Poetry in Prose* (Oxford) is the Warton lecture on English Poetry by Walter de la Mare. *Caravansery and Conversation* (Stokes) comprises essays that include information on Conrad, Galsworthy, W. H. Hudson, William Rossetti, Meredith, George Moore, by Richard Carle. *From Anne to Victoria,* edited

by Bonamy Dobree, contains critical essays by noted contemporaries, including T. S. Eliot on Byron, W. H. Auden on Pope, Edwin Muir on Sir Walter Scott.

THE PERSONAL ESSAY

The *Essay Annual*, edited by Erich Walter (Appleton-Century) provides a conspectus from year to year of what is being done in the essay. *Eight Decades* (Houghton, Mifflin) is by Agnes Repplier, the foremost of American essayists who thus celebrates her eightieth birthday with a selection of essays and episodes, witty, urbane, erudite, with a brief autobiographical introduction. *Reperusals and Re-Collections* (Harcourt, Brace) are essays by Logan Pearsall Smith, mainly on reading and writing by this delightful American-English virtuoso. *As I was Saying* (Dodd, Mead) is a posthumous collection of G. K. Chesterton. An anthology of Chesterton's writings has been compiled by Raymond T. Bond in *The Man Who Was Chesterton. Free Speech and Plain Language* (Morrow) contains the best of seven years of forceful, purposeful writing, mainly on social economics, culture, and society, by Albert Jay Nock.

Only the Other Day and *All of a Piece* (Lippincott) is by Harold Nicolson. *Small Talk* comprises various witty, graceful, cosmopolitan essays, some having to do with America. *Mild and Bitter* (Doubleday, Doran) is mixed prose and poetry. *Ringside Seats* (Dodd, Mead) by Katherine Fullerton Gerould is collected essays with a varied range of a decade's writing, the title essay being of the Lindbergh case.

Let Your Mind Alone by James Thurber (Harper) and *Bed of Neuroses* by Wolcott Gibbs (Dodd, Mead) are books of essays corrective of the popular process of synthetic culture and personality. *Life with Mother* is a posthumous volume of Clarence Day's family sketches (Knopf). *As I Live and Breathe* (Stokes) contains simple and unaffected pieces on being a newspaper man's wife in Macon, by Willie Snow Ethridge. *The Olive Tree*, contains essays mainly serious, and some on literary topics, from Aldous Huxley over some years, including the essay on Benjamin Haydon and the reminiscence of D. H. Lawrence (Harper). *In the American Jungle* is a collection of essays and speeches literary and political, with autobiographical material, by Waldo Frank (Farrar & Rinehart). *Country Matters* is the English countryside, written and engraved by Clara Leighton (Macmillan). *Down the River* is the picture of an English river by H. E. Bates (Holt). *A Book of Hours*, by Donald Culross Peattie contains essays on everyday happenings by a naturalist who is also a stylist (Putnam). *Concord River* contains the nature journals of William Brewster who died in 1919. *Let Me Show You Vermont* is by Charles Edward Crane (Knopf). *Forty Years on Main Street* warm-hearted editorials of American life and opinion covering four decades is by William Allen White and compiled by Russell H. Fitzgibbon (Farrar & Rinehart).

COLLECTIONS

American Stuff is an anthology of prose and verse by members of the Federal Writers' Project—50 writers, 16 artists, sketches, short stories, ballads and songs in American idiom (Viking). *New Letters in America*, annual magazine-book of new talent not restricted to America, is edited by Horace Gregory (Norton). *New Writing* from England, with Americans and European writers also, is edited by John Lehmann, the third year (Knopf). *Breaking into Print*, papers by 20 writers on their first efforts, ed. Elmer Adler (Simon & Schuster), includes E. A. Robinson, Pearl Buck, A. E. Coppard, R. Jeffers, E. Wharton, Dreiser, S. V. Benét. *Southern Treasury of Life and Literature*, ed. by Stark Young, ranges from Washington and Jefferson to Cabell and Faulkner (Scribner). *The New Caravan*, ed. Alfred Kreymborg, Lewis Mumford, Paul Rosenfeld, is a miscellany of prose and poetry from new and old writers (Norton). *We Were New England*, selections from obscure memoirs of

dozens of New Englanders from early times to the Civil War, is subtitled "Yankee Life by Those Who Loved It," ed. Barrows Mussey. *New Directions in Prose and Poetry,* experimental writing, is edited by James Laughlin (Norfolk: New Directions). *Woollcott's Second Reader* is a collection of Alexander Woollcott's favorites, including two full-length novels, Maugham's *Cakes and Ale* and Anne Parrish's *All Kneeling.*

MARXIST CRITICISM

The Writer in a Changing World, essays and speeches by Hemingway, MacLeish, Carleton Beals, and other People's Front writers, politically conscious, is edited by Henry Hart (Equinox). *Change the World* is mostly from Michael Gold's column in *The Daily Worker,* reviews, essays, sketches, etc., from the communist viewpoint International). *The Novel and the People,* Marxian canons of criticism, is by Ralph Fox (International).

MISCELLANEOUS

The Importance of Living by Lin Yutang (Reynal & Hitchcock) is a blend of Chinese philosophy and Chinese comment on Western civilization. *Ends and Means* is Aldous Huxley's account of his religious conversion (Harper). *My New World* is a continuation of Ernest Dimnet's autobiography, with notes on his American experiences (Simon & Schuster). *The Amberley Papers* is Bertrand Russell's account of the Victorian life of his parents from their letters and diaries (Norton). *Before I Forget* is Burton Rascoe's autobiography with many comments on the literary world of today (Doubleday, Doran). *Everybody's Autobiography,* by Gertrude Stein (Random House) is an account of her literary tour through America.

As I Was Going Down Sackville Street is reminiscences of literary life in Ireland by John Gogarty (Reynal & Hitchcock). *Have You Anything to Declare?* is a work in which Maurice Baring sums up the odds and ends of his literary life (Knopf). *My Father's House* is a reminiscence of the Oneida boyhood of Pierrepont Noyes, the "stirpicultural" son of John Humphrey Noyes, founder of the community (Farrar & Rinehart). *Great Trade Route* is further memories from Ford Madox Ford in a disguised autobiography (Oxford). *A Book Hunter's Holiday* recounts the adventures with books and manuscripts of A. S. W. Rosenbach (Houghton, Mifflin). *William Holmes McGuffey and His Readers* and *Old Favourites From the McGuffey Readers* are both by Harvey C. Minnich, curator of the McGuffey Museum (American Book Company). *My Life is My Song* is John Gould Fletcher's autobiography, with useful information about the Imagist school (Farrar & Rinehart). *For Readers Only* is an entertaining history of the British Museum and the celebrities who read there by J. Penn (Dutton). *I'm Looking for a Book* is a useful, classified list of books on many subjects compiled by Amy Loveman (Dodd, Mead). *Do You Want to Write?* is exact advice to the novice by Margaret Widdemer, from radio talks (Farrar & Rinehart). *Letters to Philippa* is advice on what to read, by Dorothea Brande (Sheed & Ward). *Bartlett's Familiar Quotations* is the eleventh edition edited by Christopher Morley and Louella D. Everett, much expanded (Little, Brown). *The Home Book of Quotations* is the third edition of Burton Stevenson's enormous collection (Dodd, Mead). Burton Stevenson's *Home Book of Shakespeare Quotations* (Scribner) should also be mentioned.

ENGLISH LANGUAGE AND LITERATURE

By Albert C. Baugh

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GENERAL

The present survey of American research in the field covered is selective. Many studies concerned with details too technical for the layman are omitted although they are often of considerable importance to the philologist and the literary historian. A complete list of such contributions will be found in the author's bibliography in the Supplement to the *Publications of the Modern Language Association* (*PMLA*).* The reader should also consult Hardin Craig's "Recent Literature of the English Renaissance" (*SP*), L. I. Bredvold's "English Literature, 1660–1800: A Current Bibliography" (*PQ*), Walter Graham's "The Romantic Movement: A Current, Selective and Critical Bibliography" (*ELH*), and the "Victorian Bibliography" (*MP*) compiled by the Victorian research group of the Modern Language Association, all of which except the first include foreign as well as American work. H. K. Russell, "Theses for the Year" (*South Atlantic Bull.*) lists M.A. and Ph.D. theses, published and unpublished in English and the modern languages.

THE ENGLISH LANGUAGE

F. P. Magoun suggests the use of the terms "Colloquial Old and Middle English" (Harvard) as emphasizing the importance that should be given to colloquial forms in assigning dates to the periods of English. George T. Flom has published a careful study of "Breaking in Old Norse and Old English with Special Reference to the Relations between Them" (*Language*). Two Harvard dissertations have been published in abstract: one by James E. Whitesell on "Accented Vowels in the Northumbrian Dialect of Old English," the other by Harry A. Rositzke on "The Speech of Kent before the Norman Conquest." Joseph Mersand studies in detail *Chaucer's Romance Vocabulary* (N.Y. Univ.). C. L. Stevenson considers "The Emotive Meaning of Ethical Terms" (*Mind*) Allen Walker Read offers an exhaustive survey of "Projected English Dictionaries, 1755–1828" (*JEGP*). F. G. Cassidy in "'Case' in Modern English" (*Language*) objects to Jespersen's applying the word order of pronouns to that of nouns, but agrees with him that we should not speak of case when nouns are not distinguished by form (inflection). Edwin B. Dike presents observations on "The Suffix *-ess, etc.* (*JEGP*), based upon 550 feminine forms collected by the writer. Robert Withington traces the use and meaning of "'Lady,' 'Woman,' and 'Person'" (*Amer. Speech*). More popular in appeal is Wilson Follett's "The State of the Language" (*Atl. Mo.*), defending conservative standards. Phonetic studies include John W. Black, "The Quality of a Spoken Vowel," Leroy T. Laase, "The Effect of Pitch and Intensity on the Quality of Vowels in Speech," and C. Horton Talley, "A Comparison of Conversational and Audience Speech," all published in *Archives of Speech*.

GENERAL LITERATURE

George McLean Harper has gathered together a volume of *Literary Appreciations*, ranging from George Herbert to Katherine Mansfield. Charles A. Dinsmore's *The Great Poets and the Meaning of Life* offers an interpretation of great poets

* Periodicals are cited under the following abbreviations, the reference being always to the volume for the year covered by this review:—*PMLA, Publications of the Modern Language Association of America; MP, Modern Philology; MLN, Modern Language Notes; MLR, Modern Language Review; JEGP, Journal of English and Germanic Philology; SP, Studies in Philology; PQ, Philological Quarterly; ELH, A Review of English Literary History; RES, Review of English Studies; SAB, Shakespeare Association Bulletin; RR, Romanic Review.* Titles appearing as theses or in the publications of universities are followed where possible by the name of the university.

from Homer down. An interesting study of "Chronological Age and Productivity, Various Types of Literature" has been made by Joseph B. Heidler and Harvey C. Lehman (*Eng. Jour.*), tabulating the age of over 500 authors when at the period of maximum productivity. Several brief studies consider various aspects of poetry: "The Reading of Modern Poetry" (*Amer. Rev.*) by Cleanth Brooks and Robert P. Warren; "Achievements of Intellectualist Poetry" (*ibid.*) by Mark Van Doren; "Morals and Poetry: A Defense of Both" (*ibid.*) by Geoffrey Stone; and "Intimations of Mortality: A Note on the Poetry of Childhood" (*ibid.*) by Rufus W. Rauch. Douglas Bush continues with *Mythology and the Romantic Tradition in English Poetry* (Harvard) his former study of the same theme in the Renaissance. George Boas' *A Primer for Critics* presents an analysis of the main ideas of aesthetic criticism. Briefer discussions of literary criticism are "Criticism, Inc." (*Va. Qu. Rev.*) by John C. Ransom, "Science, Criticism, and Poetry" (*Amer. Rev.*) by Alan R. Thompson, and "The Scholar and the Critic: an Essay in Meditation" (*Univ. of Toronto Qu.*) by Austin Warren, defining the function of each. Houghton W. Taylor traces *The Idea of Locality in English Criticism of Fiction, 1750–1830* (Chicago).

Wilmon Brewer's *Sonnets and Sestinas* contains a history of these two poetical forms. Ernest Bernbaum again surveys "Recent Works on Prose Fiction before 1800" (*MLN*). Herbert J. Muller's *Modern Fiction: A Study of Values* is a stimulating treatment of the novel, chiefly contemporary, in Europe and America. Alexander H. Krappe attacks the view that "The Offa-Constance Legend" (*Anglia*) is of English origin. In the field of drama mention may be made of Robert Withington's *Excursions in English Drama*, miscellaneous papers, some of which have appeared in journals; Rose Snider's *Satire in the Comedies of Congreve, Sheridan, Wilde, and Coward* (Maine); and William H. McCabe's "The Play-List of the English College of St. Omers: 1592–1762" (*Revue de Litt. Comparée*).

OLD ENGLISH LITERATURE TO 1150

The Old English epic *Beowulf* has been the subject of several special articles. C. C. Batchelor in "The Style of the *Beowulf*: A Study of the Composition of the Poem" (*Speculum*) emphasizes the Christian character of the poem, evident in vocabulary and sentiment, and notes the poet's growing sense of simplicity and restraint. Henry B. Woolf in "The Name of Beowulf" (*Engl. Studien*), following an observation of Professor Malone that Ælfhere may be the true name of Beowulf, notes other uses of *mæg* plus the genitive of a personal name which support the idea. Kemp Malone contributes two notes: "Young Beowulf" (*JEGP*), in which he presents an interpretation of the somewhat conflicting evidence concerning the character of Beowulf in his youth, and "The Burning of Heorot" (*RES*), in which he defends the accuracy of the poet concerning the incident and supports the current view of the occasion. Stephen J. Herben's "A Note on the Helm in *Beowulf*" (*MLN*) illustrates the helmet from recent finds in Sweden. The Finnsburg episode which occurs in *Beowulf* and in an independent fragment has been made the subject of an interesting reconstruction in fictional form by John Beaty under the title *Swords in the Dawn: A Story of the First Englishmen.*

The short poem *Widsith,* recently re-edited by Prof. Malone, has been the object of renewed study. In "Mid moidum ic wæs" (*Anglia*) Malone supports his interpretation of *moidum* as Moids, inhabitants of the Danish island of Mon, and notes a possible inference concerning the date of the poem. Stefán Einarsson in the periodical *Skírnir* has published a translation of the poem in Icelandic together with an introduction and Henry B. Woolf has contributed "Three Notes on *Widsith*" (*JEGP*). Kemp Malone in "The Tale of Geat and Mæðhild" (*Engl. Studies*) further studies the relationship of the

Mæðhild story alluded to in *Doer* and the Scandinavian ballad-group *Harpens Kraft*. Christian poetry is represented by Elliott V. Dobbie's study of *The Manuscripts of Caedmon's Hymn and Bede's Death Song* (Columbia). Philip W. Souers continues his work on the Franks Casket, the latest installment dealing with "The Magi on the Franks Casket" (Harvard). F. P. Magoun offers a textual annotation and observations on the Old English charms: "Zu den ae. Zaubersprüchen" (*Archiv.*) and "Strophische Überreste in den altenglischen Zaubersprüchen" (*Engl. Studien*). Heinrich Henel prints "Ein Bruchstück aus Byrhtferðs Handbuch" (*Anglia*), and Rudolph Willard had edited "The Latin Texts of the *Three Utterances of the Soul*" (*Speculum*).

MIDDLE ENGLISH LITERATURE 1150-1500

The Middle Ages present naturally certain difficulties in interpretation, and J. S. P. Tatlock in "Interpreting Literature by History" (*Speculum*) observes that one must be steeped in the period to interpret its literature properly. One of the great personalities in the twelfth century was Eleanor of Aquitaine. Melrich V. Rosenberg has published a biography of her with the sub-title *Queen of the Troubadours and of the Courts of Love*. Amy Kelly's "Eleanor of Aquitaine and Her Courts of Love" (*Speculum*) deals specifically with one aspect of the same subject. Of the Latin literature of the Middle Ages written in England Woodburn O. Ross has published "A Brief *Forma Predicandi*" (*MP*) and William H. Cornog had edited "The Poems of Robert Partes" (*Speculum*), belonging to the twelfth century. B. J Whiting's "Reynard Climbs" (*Anglia*) notes evidence that foxes climbed trees, as bearing on a passage in *The Owl and the Nightingale*. Francis W. Nelson, "The Original of the *Ayenbite of Inwit*" (*PMLA*), shows that contrary to current opinion two copies of Friar Lorens' *Somme la Roi*, hitherto unrecognized, appear in the catalogue of Dan Michel's library. Lillian L. Steckman publishes a description of "A Late Fifteenth-Century Revision of Mirk's *Festial*" (*SP*) which she is editing. Ruth J. Dean lists the "Manuscripts of St. Elizabeth of Schönau in England" (*MLR*).

The famous Middle English romance *Sir Gawain and the Green Knight* is the subject of two notes by F. P. Magoun: "Kleinere Beiträge zu *Sir Gawain*" (*Anglia*), and "Sir Gawain and Medieval Football" (*Engl. Studies*), the latter indicating that members of Arthur's court played football with the Green Knight's head. Henry L. Savage discusses a reading in "*Brow* or *Brawn*" (*MLN*). *Valentine and Orson, translated from the French by Henry Watson* has been edited by Arthur Dickson (*EETS*). E. E. Ericson, in "'Reaving the Dead' in the Age of Chivalry" (*MLN*), shows that stripping the dead was a respectable practice among the military gentry. Less work seems to have appeared this year on the early drama, but Mendel G. Frampton discusses "The Brewbarret Interpolation in the York Play and the Sacrificium Caymes and Abell" (*PMLA*), arguing that the interpolation in the Cain play, made in the Register in 1558, was from an older play dating probably from between 1415 and 1431. John H. Smith notes "Another Allusion to Costume in the Work of the Wakefield Master" (*PMLA*), significant in dating the period of his activity. Of a more general nature and looking forward to the matter of the next paragraph is Earle Birney's "English Irony before Chaucer" (*Univ. of Toronto Qu.*)

In the fifteenth century, Curt F. Bühler calls attention to "A New Lydgate-Chaucer Manuscript" (*MLN*) in the Pierpont Morgan Library. The same writer notes in this library "A Middle English Prayer Roll" (*MLN*) and prints from it a hitherto unknown religious poem. H. C. Schulz, in "Thomas Hoccleve, Scribe" (*Speculum*) concludes that the three manuscripts which Furnivall at first accepted as in Hoccleve's hand and later rejected are most likely holographs. In a second section the author considers the date

of Hoccleve's death, placing it *c.* 1430 rather than *c.* 1450. Among studies of the ballad we may mention George A. Taylor's "Ballads" (*Dalhousie Rev.*) and Frances M. Barbour's "Some Fusions in Missouri Ballads" (*Jour. of Amer. Folk-Lore*), in which variants of some traditional English ballads are recorded.

CHAUCER

American interest in Chaucer continues undiminished. Rosemond Tuve has followed up her studies of the seasons in Middle English poetry by an article on "Spring in Chaucer and before Him" (*MLN*). Haldeen Braddy finds a parallel situation in Chaucer's *Book of the Duchess* and Two of Granson's *Complaintes*" (*MLN*). Germaine Dempster offers a further note on "Chaucer's *Wretched Engendering* and *An Holy Meditation*" (*MP*), opposing the attribution of *An Holy Meditation* to Chaucer, and making especially the point that Chaucer's *Wretched Engendering* was presumably in prose and was a translation from Pope Innocent, whereas the *Meditation* is in verse and but slightly dependent upon the *De Contemptu Mundi*. It is not known why Chaucer began late in life to revise the *Legend of Good Women*. Robert M. Estrich maintains that esthetic considerations were paramount, in "Chaucer's Maturing Art in the Prologues to the *Legend of Good Women*" (*JEGP*). That Chaucer could have found in Vincent of Beauvais all necessary ideas for his treatment of Cleopatra in this poem is the view of W. K. Wimsatt, Jr., in "Vincent of Beauvais and Chaucer's Cleopatra and Croesus" (*Speculum*). The source of Chaucer's plan for the *Canterbury Tales* is still being looked for. Beatrice D. Brown finds some resemblances in "A Thirteen-Century Chaucerian Analogue" (*MLN*) in Caesarius of Heisterbach. It is now generally accepted by Chaucer scholars that the poet sometimes made changes in the assignment and position of tales in his great work.

Carleton Brown in "The Man of Law's Head-Link and the Prologue of the *Canterbury Tales*" (*SP*) presents the interesting hypothesis that the Man of Law originally was intended to open the story-telling and his tale was to be the *Melibeus*. Albert C. Baugh presents evidence that "The Original Teller of the Merchant's Tale" (*MP*) was the Friar, and suggests that the tale was transferred to the Merchant when the idea of a Friar-Summoner quarrel required the Friar to tell a story at the expense of a summoner. Our understanding of the various pilgrims' characters is slowly being enriched from contemporary evidence. B. J. Whiting in "The Miller's Head" (*MLN*) finds four recorded instances of heads hard enough to "heve of harre" a door. Earl D. Lydon records charges against "Roger de Ware, Cook" (*MLN*) from London court rolls. L. A. Haselmayer's "The Apparitor and Chaucer's Summoner" (*Speculum*) is a study of the duties and official status of medieval summoners. Lawrence F. Hawkins has attempted to determine *The Place of Groupe F in the Canterbury Chronology* in his dissertation (N.Y. Univ.). Claude Jones believes "The Monk's Tale, a Mediaeval Sermon" (*MLN*), and reaches a similar conclusion concerning "The 'The Second Nun's Tale,' a Medieval Sermon" (*MLR*). Germaine Dempster reveals "Chaucer at Work on the Complaint in the *Franklin's Tale*" (*MLN*) by showing the nature of Chaucer's dependence upon Jerome's *Adversus Jovinianum* for his exampla in *Dorigen's* complaint. Finally, it may be noted that Karl Young has printed pertinent source passages for three of Chaucer's allusions in "Chaucer and Peter Riga" (*Speculum*), "Chaucer and Aulus Gellius" (*MLN*), and "Chaucer's Aphorisms from Ptolemy" (*SP*).

SIXTEENTH CENTURY

William G. Crane's *Wit and Rhetoric in the Renaissance* (Columbia) is, as its sub-title indicates, a study of the formal basis of Elizabethan prose style. The Elizabethan rhetorician, John Hoskyns, has been made the subject of a full treatment in Louise B. Osborn's *The Life, Letters, and Writings of John Hoskyns,*

1566–1638 (Yale), including a critical edition of his *Directions for Speech and Style. One Soul in Bodies Twain*, by Laurens J. Mills, is a study of friendship in Tudor literature and Stuart drama. A convenient collection of *Elizabethan Tales* has been edited by Edward J. O'Brien. Hyder E. Rollins contributes *Thomas Deloney and Brian Melbancke: Notes on Sources* (Harvard), pointing out Deloney's borrowings from Shakespeare's non-dramatic poetry and adding many more instances of Melbancke's pilferings from previous writers.

Renaissance non-dramatic poetry has deep roots. Curt F. Bühler in "London Thow Art the Flowre of Cytes All" (*RES*) prints a fourth text of the poem from a manuscript in the Pierpont Morgan Library and questions Dunbar's authorship of it. Helen S. Sale, "The Date of Skelton's *Bowge of Court* (*MLN*), shows that the poem was in print before 1500 and cannot be dated 1509–21, as has often been done. In "Spenser and Gosson" (*MLN*) William R. Orwen shows that, notwithstanding Spenser's statement, Gosson seems to have obtained Sidney's patronage. Alfred H. Bill has published *Astrophel, or The Life and Death of the Renowned Sir Philip Sidney*. Fredson P. Bowers in "Gascoigne and the Oxford Cipher" (*MLN*) has proved that the cipher worked out by Ward is inadmissible, and shows that there is no reason to connect *A Hundredth Sundrie Flowers* with the Earl of Oxford. Lewis T. Golding has written a full and interesting biography in *An Elizabethan Puritan: Arthur Golding the Translator of Ovid's Metamorphoses and also of John Calvin's Sermons*.

An amazing instance of plagiarism is revealed by Franklin B. Williams, Jr. in "Richard Johnson's Borrowed Tears" (*SP*), the borrowing occurring in *Anglorum Lacrimae* (1603). The same writer's "Robert Tofte" (*RES*) is the first extended treatment of this Elizabethan poet and translator. Mark Eccles' "Samuel Daniel in France and Italy" (*SP*) makes an important contribution to our knowledge of Daniel. Two letters hitherto rejected are shown to be most likely in the poet's autograph. If so, they throw light on his travels after leaving Oxford. The second half of the article concludes that Daniel was probably in Italy *c.* 1590–91 with Sir Edward Dymoke. Allan G. Chester contributes "Notes on the Bibliography of Thomas Churchyard" (*MLN*). Valuable statistical data on 12 important poets are furnished by George K. Smart in "English Non-dramatic Blank Verse in the Sixteenth Century" (*Anglia*).

EDMUND SPENSER

Spenser studies will be materially facilitated by the publication of Dorothy F. Atkinson's *Edmund Spenser: A Bibliographical Supplement*, bringing the standard work of Carpenter up to date. Biographical points are involved in Raymond Jenkins' "Spenser with Lord Grey in Ireland" (*PMLA*), in which some 34 additional documents in Spenser's handwriting are identified and details are filled in concerning Spenser's whereabouts and occupation while in Ireland with Lord Grey. V. B. Hulbert, in "Spenser's Relation to Certain Documents on Ireland" (*MP*), offers new reasons for doubting Spenser's authorship of three documents which Grossart attached much weight to. "Did Spenser Starve?" (*MLN*), by Josephine W. Bennett, makes the point that the payment to Spenser of £8 two weeks before he died is against the idea that he died "for lake of bread." Theodore H. Banks, "Spenser's Rosalind: A Conjecture" (*PMLA*), offers a plausible interpretation of a sentence in one of Harvey's letters identifying Rosalind with the young woman Spenser married. Rudolf B. Gottfried, in "Spenser's *View* and Essex" (*PMLA*), accepts the opinion that the *View* was intended as a compliment, and suggests a possible circumstance that may have led the poet to address Essex. The same author offers further argument for "The Date of Spenser's *View*" (*MLN*) as 1596 or early in 1597. D. C. Allen's "Arthur's Diamond Shield in the Faerie Queene" (*JEGP*) and Rosa-

mond Tuve's "Spenser and Mediaeval Mazers; with a Note on Jason in Ivory" (*SP*) both suggest immediate sources for Spenser's conceptions. Various aspects of Spenser's art are discussed in William S. Webb's "Vergil in Spenser's Epic Theory" (*ELH*), Rudolf B. Gottfried's "Spenser and the Italian Myth of Locality" (*SP*), and Louis B. Friedland's "Spenser as a Fabulist" (*SAB*).

ELIZABETHAN DRAMATISTS

The value of various tests in the study of the works of Elizabethan dramatists is subjected to a critical examination by Hereward T. Price in "Towards a Scientific Method of Textual Criticism for the Elizabethan Drama" (*JEGP*). John Bakeless has published *Christopher Marlowe, The Man in His Time,* a full and scholarly biography, incorporating all recent discoveries and adding certain new documents. Eleanor G. Clark's *Elizabethan Fustian* is described in the sub-title as "a study in the social and political backgrounds of the drama, with particular reference to Christopher Marlowe." Fredson T. Bowers takes up some "Bibliographical Problems in Dekker's *Magnificent Entertainment*" (*Library*). M. E. Borish, in "John Day's *Law Tricks* and George Wilkins" (*MP*), attacks the view that Wilkins collaborated in *Law Tricks,* and concludes that the evidence for Day's sole authorship is overwhelming.

Ben Jonson has received special illumination. Mark Eccles, under the title "Jonson and the Spies" (*RES*), throws light on Jonson's imprisonment, his affair with Gabriel Spencer, and his recusancy. Fredson T. Bowers attempts a reconstruction of his acting career in "Ben Jonson the Actor" (*SP*). The same author interprets "Middleton's *Fair Quarrel* and the Duelling Code" (*JEGP*) in the light of contemporary conditions. Alfred Harbage established a plausible connection between "Shirley's *The Wedding* and the Marriage of Sir Kenelm Digby" (*PQ*), and makes additions to his previous list in "Elizabethan and Seventeenth-Century Play Manuscripts: Addenda" (*PMLA*).

SHAKESPEARE

S. A. Tannenbaum's annual "Bibliography of Shakespeariana for 1936" (*SAB*) shows the compiler's usual fullness and care. Felix E. Schelling has gathered together a number of essays under the title *Shakespeare Biography and Other Papers Chiefly Elizabethan.* Alden Brook's *Will Shakspere, Factotum and Agent* makes Shakespeare a kind of syndicate. Thomas O'Hagan's volume *What Shakespeare Is Not* opposes the idea that Shakespeare is ever a political or religious propagandist. Walter C. Curry offers an interpretation of some of Shakespeare's plays under the title *Shakespeare's Philosophical Patterns.* The unorthodox will find interest in Eva T. Clark's *The Man Who Was Shakespeare,* the life of Edward de Vere, seventeenth Earl of Oxford, by one who believes he was the author of Shakespeare's plays. Le Roy E. Kimball, in "Miss Bacon Advances Learning" (*Colophon*), gives an account of the American anti-Shakespearean, Delia Bacon. The sonnets are discussed in H. McClure Young's *The Sonnets of Shakespeare: A Psycho-Sexual Analysis* and Henry W. Wells's *"A New* Preface to Shakspere's Sonnets" (*SAB*), the latter presenting the more conservative view.

Among studies of the plays, mention can be made of only a few. Olin H. Moore shows that "Shakespeare's Deviations from *Romeus and Juliet*" (*PMLA*) are not all in minor characters. Elmer E. Stoll, in *"Hamlet,* and the *Spanish Tragedy* Quartos I and II: A Protest" (*MP*), believes that the alterations in Q_1 are best explained as restorations derived from the old play. J. Dover Wilson's recent Hamlet study has provoked considerable discussion. A. A. Gay argues against his interpretation of "The Fencing Match in *Hamlet*" (*RES*). The episode is also discussed by Lee Mitchell, "The Fencing Scene in *Hamlet*" (*PQ*). Leo Kirschbaum examines the evidence of the Harvey marginalia and concludes that it cannot be used to fix "The Date of Shakespeare's *Hamlet*" (*SP*). Interesting interpretations of Othello are contained in G. R. Elliott's *"Othello*

as a Love-Tragedy" (*Amer. Rev.*) and S. A. Tannenbaum's "The Wronged Iago" (*SAB*). In "The Occasion of King Lear" (*SP*) John W. Draper maintains the thesis that the play was written with some attention to the efforts of King James to effect a closer union of England, Scotland, and the other parts of the realm. The same author's "King James and Shakespeare's Literary Style" (*Archiv*) contains an analogous point of view. The general reader will find interest in three studies of Shakesperian performances: Robert L. Shurter's "Shakespearean Performances in Pre-Revolutionary America" (*So. Atl. Qu.*), Walter P. Eaton's "Shakespeare—with a Difference" (*Atl. Mo.*), and A. Michal Myers's "British and American Staging of Shakspere" (*SAB*).

SEVENTEENTH CENTURY

In the seventeenth century we may first note Charles M. Coffin's study of *John Donne and the New Philosophy* (Columbia). Another Columbia dissertation is *Phineas Fletcher: Man of Letters, Science and Divinity,* by Abram B. Langdale. B. Sprague Allen's *Tides in English Taste (1619–1700)* is a comprehensive study in two volumes. Gertrude E. Noyes has compiled a *Bibliography of Courtesy and Conduct Books in Seventeenth-Century England.* Joseph Hall's *The Discovery of a New World,* as Englished by John Healey about 1609, has been edited and published in a beautiful edition by Huntington Brown, with a foreword by Admiral Byrd.

Having a bearing upon Milton, Arnold Williams' "Commentaries on Genesis as a Basis for Hexaemeral Material in the Literature of the Late Renaissance" (*SP*) surveys the principal commentaries on the six days of Creation. Since Raleigh and Sir Thomas Browne leaned heavily on Pererius and others, it is suggested that Milton may have done so too. Arthur Barker, in "Milton's Schoolmasters" (*MLR*), attempts to determine the influence exerted on Milton by Thomas Young, his private tutor, and Alexander Gill, headmaster of St. Paul's School. "The Text of *Comus,* 1634 to 1645" (*PMLA*), by John S. Diekhoff, shows that the Trinity MS. is not a first draft but a transcription with final revisions and occasional additions and deletions. In "The Theological Dogma of *Paradise Lost,* III, 173–202" (*PMLA*) Maurice Kelley shows that the passage variously interpreted as Calvinistic and as Arminian is contrary to the doctrine of Calvin and consonant with the Arminian views expressed by Milton elsewhere. In two important articles Grant McColley surveys the astronomical background of *Paradise Lost.* In one, "Milton's Dialogue on Astronomy: The Principal Immediate Sources" (*PMLA*), he identifies the direct source for certain passages in the poem. In the other, "The Astronomy of Paradise Lost" (*SP*), he places Milton's views against the background of an illuminating survey covering the principal astronomical theories of the seventeenth century. William R. Parker has published several short papers on Milton, of which mention may be made of "Tragic Irony in Milton's *Samson Agonistes*" (*Études anglaises*) and "'*Misogyny*' in Milton's *Samson Agonistes*" (*PQ*).

Restoration drama can now boast of a beautiful edition of *The Dramatic Works of Roger Boyle, Earl of Orrery,* in two volumes, edited by William S. Clark. Dr. Clark has also written on "Corpses, Concealments, and Curtains on the Restoration Stage" (*RES*). Herbert Silvette has begun a series of articles on "The Doctor on the Stage: Medicine and Medical Men in Seventeenth Century English Drama," in the *Annals of Medical History.* Thomas B. Stroup is the author of an essay on "Supernatural Beings in Restoration Drama" (*Anglia*).

Dryden and his contemporaries come in for some significant treatment. Earl R. Wasserman identifies in earlier drolleries and other collections of seventeenth century poetry Tonson's additions of "Pre-Restoration Poetry in Dryden's *Miscellany*" (*MLN*). Howard P. Vincent traces the difficulties and delays attending the publication of William Wycher-

ley's *Miscellany Poems* (*PQ*). Maurice Irvine clears up the "Identification of Characters in Mulgrave's 'Essay upon Satyr'" (*SP*). Charles E. Ward in "Shadwell, 1658–1668" (*LTLS*) produces documentary evidence that during this decade Shadwell was clerk to Sir Robert Long, Auditor of the Exchequer, and that the playwright's marriage took place not later than the middle of 1667. Finally Edward A. Richard's *Hudibras in the Burlesque Tradition* (Columbia) traces the influence of Butler on later writers of burlesque.

EIGHTEENTH CENTURY

In the eighteenth century increased interest attaches to the spread of certain ideas which find their reflection in literature. W. P. Jones discusses "The Vogue of Natural History in England, 1750–1770" (*Annals of Science*). James H. Warner traces "Eighteenth-Century English Reactions to the Nouvelle Héloise" (*PMLA*). Victor M. Hamm finds "A Seventeenth-Century French Source for Hurd's *Letters on Chivalry and Romance*" (*PLMA*). Bertrand H. Bronson, in "Ritson's *Bibliographia Scotica*" (*PMLA*), informs us that Ritson's MS., once thought to be destroyed, several times lost and found, is now in the author's possession. Liberal selections containing matter still of interest are published here for the first time. John W. Draper's "The Metrical Tale in XVIII-Century England" (*PMLA*) comments on the neglect of the type in literary histories and notes briefly some typical examples. Walter Graham describes "Joseph Addison's Letters to Joshua Dawson" (*PQ*), a collection of 100 letters recently destroyed but of which he has discovered transcripts. The same author, in "Thomas Baker, Mrs. Manley, and the *Female Tatler*" (*MP*), opposes the arguments for Mrs. Manley's authorship of the periodical and supports the traditional ascription to Baker. Paul B. Anderson, in "La Bruyère and Mrs. Crackenthorpe's *Female Tatler*" (*PMLA*), points out several instances of borrowing acknowledged and unacknowledged. Earl Harlan has published a careful study of *Elijah Fenton, 1683–1730* (Pennsylvania), one of Pope's collaborators in the translation of Homer. Maxwell B. Gold in *Swift's Marriage to Stella, together with Unprinted and Misprinted Letters* makes probable the marriage although it was not publicly acknowledged.

Two studies of eighteenth century prose fiction have appeared: Walter F. Wright's *Sensibility in English Prose Fiction: 1760–1840: A Reinterpretation* (Illinois), and Robert B. Heilman's *America in English Fiction, 1760–1800: The Influences of the American Revolution* (Louisiana), the latter being a Harvard dissertation. Robert W. Seitz has discussed "The Irish Background of Goldsmith's Social and Political Thought" (*PMLA*). In the field of the drama Emmett L. Avery writes of "Vaudeville on the London Stage, 1700–1737" (State Coll. of Wash.), and Charles B. Woods contributes "Notes on Three of Fielding's Plays" (*PMLA*). Edward G. Ainsworth has published a volume called *Poor Collins: His Life, His Art, and His Influence* (Cornell). J. Fisher in "Shenstone, Gray, and the 'Moral Elegy'" (*MP*) reveals Shenstone's priority in the moralized elegy and Irving L. Churchill reprints "Shenstone's Billets" (*PMLA*), now in the Harvard Library. Robert T. Fitzhugh publishes information about "Burns' Highland Mary" (*PMLA*) revealing a character not very attractive. Benjamin P. Kurtz and Carrie C. Autrey publish *Four New Letters of Mary Wollstonecraft and Helen M. Williams*, three of them by Shelley's mother-in-law.

NINETEENTH CENTURY

The early nineteenth century, which saw the extraordinary popularity of Scott, can now be made the object of a centenary view. This is the purpose of Paul N. Landis's "The Waverley Novels, or A Hundred Years After" (*PMLA*). Felix Sper has compiled a brief reference guide for *The Periodical Press of London, Theatrical and Literary (excluding the daily newspaper), 1800–1830*. Kenneth Forward identifies the author of the "'Libellous Attack' on De Quincey" (*PMLA*)

in the *John Bull Magazine* as Maginn. Alan L. Strout, in "The *Noctes Ambrosianae, and James Hogg*" (*RES*), reveals the character of Hogg as represented in the *Noctes*. Frederick L. Jones, in "Hogg and *The Necessity for Atheism*" (*PMLA*), maintains with considerable cogency that Hogg wrote the first draft and was really joint author of the work. Hill Shine continues his studies in Carlyle with "Carlyle's Fusion of Poetry, History, and Religion by 1834" (*SP*).

Bennett Weaver discusses "Wordsworth's *Prelude:* The Poetic Function of Memory" (*SP*). Edna A. Shearer prints "Wordsworth and Coleridge Marginalia in a Copy of Richard Payne Knight's *Analytical Inquiry into the Principles of Taste*" (*Huntington Libr. Qu.*), remarkable for being mostly in Wordsworth's hand. Ellsworth Barnard writes fully concerning *Shelley's Religion*. Wallace C. Brown has been publishing a series of articles on the Near East in English literature, among which may be mentioned "English Travel Books and Minor Poetry about the Near East, 1775–1825" (*PQ*), "Byron and English Interest in the Near East" (*SP*), and "Thomas Moore and English Interest in the East" (*SP*). Moore has been the subject of a full biography by Howard M. Jones in *The Harp That Once—A Chronicle of the Life of Thomas Moore*. Stewart W. Holmes examines "The Sources Browning's *Sordello*" (*SP*). E. J Brown offers "Swinburne: A Centenary Estimate" (*Univ. of Toronto Qu.*), Paul Knaplund treats "Swinburne and the Poet Laureateship" (*ibid.*), and Ruth C. Child analyzes "Swinburne's Mature Standards of Criticism" (*PMLA*).

CONTEMPORARY

Among works of more general scope or appeal dealing with contemporary literature may be mentioned *The Time of Yeats* by Cornelius Weygandt, the second part of his survey of English poetry in the last hundred years. James A. Roy has published *James Matthew Barrie*, and Katharine G. Shields has compiled a partial bibliography of Barrie now appearing in the *Bulletin of Bibliography*. Carroll Sibley's *Barrie and His Contemporaries* contains "Cameo Portraits of Ten Living Authors": Barrie, Lord Dunsany, Sir Austen Chamberlain, W. W. Jacobs, John Drinkwater, James Hilton, Lascelles Abercrombie, Mrs. Joseph Conrad, Sir Philip Ben Greet, and Fannie Hurst. Sister Marie Virginia's *G. K. Chesterton's Evangel* offers a sympathetic interpretation. Articles on some of the lesser contemporary writers can readily be found by reference to the periodical indexes.

GERMANIC LANGUAGES AND LITERATURE

By F. W. Kaufmann

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LINGUISTIC REORIENTATION

The reviewer advocated in several previous reports that the study of foreign literatures should be revitalized and that more attention should be paid to the transmission of cultural values inherent in these literatures. With greatest satisfaction he can now refer to the resolution of the Executive Council of the Modern Language Association of America which demands that "encouragement should be given to literary and linguistic studies endeavoring to interpret the facts of exact research from more comprehensive points of view, whether social, historical, or in general philosophical."

The trend toward a reorientation of linguistic problems may best be judged from the increasing interest in the phonemic interpretation of linguistic phenomena. In literature this trend may be documented by studies on general esthetic problems, as D. W. Schumann's study on "The Problem of Age-Groups" (*PMLA*)* or that on "Literature as Adjustment" (*Journal of Abnormal and Social Psychology*) which the reviewer published in collaboration with W. S. Taylor. W. Seiferth in his article "Versuch einer Motivlehre" (*MfdU*) emphatically and rightly rejects the formalistic approach to literature in the current historical and esthetic study of the subject. He demands that the understanding of literature should be revitalized by an interpretation of the literary motif and its relation to the problem of life itself, an approach which would give us a better insight into the poetic process and assign to the formal analysis its proper place at the end of the methodological procedure. H. Hafkesbrink in "Die philosophischen Voraussetzungen der neuern deutschen Literaturwissenschaft" (*GR*) proves that the tendency of modern investigation in the field of literature is leading from the factualistic interpretation to an emphasis on the cultural and philosophical values and thereby is more apt to do justice to the creative process of the author.

PHILOLOGY

E. C. Roedder in an article on "Gothic gasaihwan: a Study in Germanic Synonyms" (PMLA) defends, on the basis of an examination of Wulfila's use of compounds, the genuineness of his Gothic style, which to him is the more remarkable in view of the difficult circumstances under which he made his translation. G. T. Flom in a study on "Breaking in Old Norse and Old English" (*Language*) examines the consonantal breaking in both languages and the phase of velarization of front vowels in Old English, generally called u-o/a umlaut, and arrives at the conclusion that these three phenomena are not only similar in nature but directly related in origin. A. L. McCobb examines the occurrence of *The Double Preterit Forms gie-gienc, lie-liez, vie-vienc in Middle High German* (Johns Hopkins Univ. Press).

SCANDINAVIAN

The study done in this field may be indicated by G. T. Flom's monograph on *The Old Norwegian General Law of the Gulathing* (Illinois Studies in Language and Literature) and O. Springer's book on *Die Nordische Renaissance in Skandinavien* (Kohlhammer, Stuttgart and Leipzig). Springer examines the rise of the nationalistic movement in the Scandinavian literature of the Nineteenth Century beginning with the influence of German Romanticism on H. Steffens. For his pupil Oehlenschläger this nationalism was still an esthetic

* Abbreviations: GR = *Germanic Review*; JEGP = *Journal of English and Germanic Philology*; MfdU = *Monatshefte für deutschen Unterricht*; PMLA = *Publications of the Modern Language Association of America.*

play, whereas Grundtvig seriously attempted to revive the Nordic past as a religious and metaphysical world view. Olof Rudbeck prepared the way for a new interest in Old Norse literature, and thus became responsible for the work of Erik Gustav Geijer and Esaias Tegnér.

MEDIEVAL GERMAN

E. T. H. Bunje, in *A Reinterpretation of the Expository Verses of the Hildebrandslied* (Univ. of California Publications in Modern Philology), offers, on the basis of a minute study of the manuscript the conjecture "sunu fatar ungot" and a novel interpretation of the whole lav. C. T. Rapp, in the monograph *Burgher and Peasant in the Works of Thomasin von Zirclaria, Freidank and Hugo von Trimberg* (Washington, D.C.), examines home-life and family-life, marriage, religion, amusements, education and profession of medieval man and woman as reflected in these three outstanding didactic writers of the Thirteenth Century. Servants, laborers, merchants, all the lower classes as well as the bourgeosie are included in this investigation. The author herself realizes that the picture here presented needs correction from other non-didactic sources. Archer Taylor and F. E. Ellis completed a long desired *Bibliography of Meistergesang* (Indiana Univ. Studies). This bibliography is a preliminary study for a history of the Meistersinger and their art. It lists the more important poets and a number of minor figures, the places where Meistergesang has been practised, the metres and the rules, the recently printed *Meisterlieder,* as well as the publications on the various topics as far as they or their titles were accessible to the authors. Archer Taylor's monograph on *The Literary History of Meistergesang* (Modern Language Association of America, New York) is intended to form the basis for an exhaustive literary history of the Meistergesang. Therefore the author presents the available information along with an analysis of the problems which are still awaiting further investigation. In a first chapter, he deals with the historical aspects of Meistergesang, *i.e.,* with the background, the dissemination, the epoch the manuscripts, etc. In a second chapter, the formal aspects, *i.e.,* the rules, metres and the music are analyzed. The third chapter examines the literary aspects, *i.e.,* the relation to theological literature and movements, secular themes and forms.

GOETHE

M. Thalmann examines in an article on "Weltanschauung im Puppenspiel vom Doktor Faust" (*PMLA*) the relation between the Faust theme proper and the comical character Hanswurst and their importance for the expression of the world view. The author shows how Hanswurst gradually assumed humanly sympathetic traits and finally allowed the South-German Catholic view to take its place at the side of the rationalistic and tragic Protestant views expressed in the fate of Faust. In A. Scenna's *The Treatment of Ancient Legend and History in Bodmer* (Columbia Univ. Press) the aims of the Swiss author are analyzed on the basis of mostly unpublished material. His interest in classical literature, in history, character analysis and ethical conduct is subjected to a detailed study. On this basis the 21 dramas are analyzed in three chapters: dramas of legend and prophecy, dramas of ethical import and political dramas. The author sees the significance of Bodmer not in the esthetic qualities but in his aim to "arouse in his own Swiss people a love of freedom, independence, true democracy by showing them examples of patriotism and democracy from classical antiquity."

F. S. Sethur, in a study on "Goethe und die Politik" (*PMLA*) arrives at the following conclusions regarding Goethe's political views. It is the function of the State to guarantee the development of the individual. His ideal is a centralized system in which the individual should actively participate under the guide of a strong ruler; but in practice, he is an individualist who lends his service to the small principality of Weimar. He is a liberal who expects from the individual a respect for the interests of others,

and a conservative who demands the subordination under the existing laws. He advocates theoretical equality and practical differentiation according to birth and ability. On the whole the State is for him a rational system, whereas the society is an organism. A balance between idea and interests in politics should be the aim of development, but in reality Goethe served the interests of the existing system.

Ludwig Tieck was made the subject of several studies, *viz.* A Gillies, "Ludwig Tieck's English Studies at the University of Goettingen 1792–1794" (*JEGP*); A. W. Porterfield, "Goethe and Tieck in Dramatic Parallels" (*JEGP*); P. Matenko. "Tieck's Diary Fragment of 1803 and His Novelle Sommerreise" (*JEPG*); E. A. Lang, *Ludwig Tieck's Early Concept of Catholic Clergy and Church* (Catholic University of America, Washington).

NIETZSCHE

The great interest in the study of the poet-philosopher Friedrich Nietzsche is not only significant as a proof for the growing philosophical trend in the study of literature, but also because Nietzsche is the most important challenger of the merely factualistic approach to literature. H. S. Bluhm continues his studies on the early Nietzsche in an article on "Nietzsche's Religious Development as a Student at the University of Bonn" (*PMLA*). Nietzsche had broken with the traditional religious views of his family during his student years at Schulpforta. At Bonn, he soon turned away from the study of theology and devoted himself entirely to that of philology. He resolutely resisted all efforts on the part of his mother to bring him back to his old intentions and renounced the peace of mind of the faithful and became a nonconformist who considered it his duty to give himself to the exacting pursuit of truth. In his article, "Aspects of Nietzsche's Struggle with Philology to 1871" (*GR*), Th. M. Campbell shows how Nietzsche's interest gradually shifted from the conventional pragmatic approach to philology to a philosophical interpretation. At an early date, Emerson's idea of the interplay of fate and free will led him to see the problematic nature of history. After the study of Schopenhauer's philosophy, his own philosophical inclination made itself felt in the demand for a wider and more cultural approach to the history of literature and his contempt for the accumulation of detailed knowledge. In the interpretation of Greek literature, he gave the first formulation of his ideal of the superman. In his classical studies, he also found a principle of historical continuity in the discovery that concrete personalities can be dissolved into their nurturing atmosphere. M. H. Harrison devotes a study to the *Modern Religious Drama in Germany and France* (Stratford, Boston). H. J. Weigand continues his Thomas Mann research with an analysis of the author's latest novel: "Thomas Mann's *Joseph in Aegypten*" (*MfdU*), in which he characterizes the symbolic significance of this work and its peculiar combination of the typical with the minutest detail. He indicates the main problems contained in such characters as Joseph, Potiphar, and his wife Mut-em-enet, and concludes with a paragraph on the increasing mannerism of the author's style. Among other authors whose works have been treated in shorter publications may be mentioned Gerhart Hauptmann, Heinrich Mann, Jakob Wassermann and E. G. Kolbenheyer.

LATER PERIODS

D. Lasher-Schlitt examines *Grillparzer's Attitude toward the Jews* (New York). After a compact survey of the history of the Jews in Vienna, the author describes Grillparzer's social and literary contacts with Jews and his comments on Jews in letters, diaries, and autobiography. She arrives at the conclusion that the dramatist made no racial discrimination, but judged Jews and Christians alike according to their value as personalities, although his rare collective references are not so favorable. In his dramas, the worst types of Jews either show traits of the author's Christian acquaintances or follow a

literary pattern. They are more than balanced by two of the finest characters in Grillparzer's work, the Esthers in the fragment "Esther" and "Die Jüdin von Toledo." In an article on "Grillparzer's Sappho and Thomas Mann's Tonio Kroeger" (*MfdU*), W. H. Root compares the two works with regard to the pessimistic conception of the poet and finds that this pessimism does not derive from a negation of the values of life, but from the realization that the poet is essentially unable to attain these values. In his monograph *Luise Hensel als Dichterin* (Northwestern Univ.), F. Spiecker presents a revaluation of a poetess whose harmonious produc had, characteristically enough, alwa been interpreted as the result of a lac of inner tension. A careful analysis the sources as well as that of h literary products reveals that beneat the calmness of the surface ther lived a burning passion, a conscio struggle for inner peace, and that h conversion to the Roman Catholi faith was partly due to the desolatin condition in which she spent the late part of her life. This study throw some new light on the origin of th "Müllerlieder"; it also contains number of hitherto unpublished poem and verses.

ROMANCE LANGUAGES AND LITERATURES

By George Irving Dale

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BIBLIOGRAPHIES

J. E. Shaw continues his "Bibliography of Italian Studies in America" (*Ital*).* Of interest to Hispanists are the following: D. C. Clarke's "Una Bibliografía de Versificación Española" (Cal.); "Juan José Domenchina: Bibliografía" (*RHM*) by S.C.R.C (osenbaum), and the same writer's "Gabriela Mistral: Bibliografía" (*RHM*); an anonymous "Bibliografía Hispanoamericana" (*RHM*) of contemporary publications; "Mexican Literary Periodicals of the Nineteenth Century" (*PMLA*) by J R. Spell. *"My Nightmare.* The Last Tale by Poe" (*PMLA*) by J. E. Englekirk has appended to it a complete list of Mexican versions of Poe and Mexican criticisms of Poe.

* Abbreviations: *AJA, American Journal of Archeology;* Cal., University of California Publications in Modern Philology; Chi., University of Chicago Press; *FR, French Review;* Harv., Harvard Studies and Notes in Philology and Literature; *Hisp., Hispania; HR, Hispanic Review;* IFS, Institute of French Studies; Ill., University of Illinois Studies in Language and Literature; *Ital., Italica;* JHS, Johns Hopkins Studies in Romance Literatures and Languages; *L. Language; MLN Modern Language Notes; MP, Modern Philology;* Penn., University of Pennsylvania Press; *PMLA, Publications of the Modern Language Association of America; PQ, Philological Quarterly;* Prin., Princeton University Press; *RHM, Revista Hispánica Moderna; RR, Romanic Review; S, Speculum;* Smith, Smith College Studies in Language and Literature; *SP, Studies in Philology.*

LINGUISTICS

H. Keniston has published *The Syntax of Castilian Prose (The Sixteenth Century)* (Chi.), which is the first of four volumes devoted to Spanish syntax. *Spanish Syntax List: a Statistical Study of Grammatical Usage in Contemporary Spanish Prose on the Basis of Range and Frequency* (Holt) by the same author, is self explanatory. "Un Problème de Syntaxe: 'Elle mange que c'en est dégoûtant'" (*RR*) is discussed by R. Le Bedois and L. Spitzer. W. F. Manning offers "A Proposed Etymology: *aller<ad-iterare*" (*L*); G. C. Adams discusses "French *aumusse*, English *amice*" (*SP*); H. Loss "*Esprec* in 'Le de la Feuillée'" (*MLN*) and A. V. Roche "Le mot 'traditionalisme'" (*MLN*). M. A. Pei queries "Accusative or Oblique? A Synthesis of the Oblique Case of Old French and the Single Case System of the Other Romance Languages" (*RR*). Romance Etymologies" (*L*) are presented by C. C. Rice, and E. B. Place discusses "Romance *si(se) sit?*" (*HR*).

The field of Spanish is well repre-

sented by the following articles: "Manifestación Moderna y Nueva de la Apócope en Algunas Voces" (*HR*) by Z. Biaggi and F. Sánchez y Escribano; "Survival of Three-Consonant Groups in Spanish" (*HR*) by R. S. Boggs; "Spanish 'caja,' 'quejar,' 'quijada'" (*HR*) by E. H. Tuttle; "The Emphatic Object Pronoun in Spanish" (*PQ*) by R. Davis; "Sangley, the Merchant-Traveller" (*MLN*) by Y. Z. Chang; "Un Passage de Lope de Vega, l'Espagnol 'segullo' et l'Etymologie du Français 'talus'" (*MLN*) by L. Spitzer. Related to Spanish is "La Situation Linguistique du Séphardite à Istanbul" (*HR*) by G. Farhi.

Other Romance studies in linguistics include: "A Word Unprotected: (*Di*)*smagare* and Dante's Use of the Word" (*SP*) by H. D. Austin; "Italian-Rumanian Long Forms as against Spanish and French Short Forms" (*PMLA*) by E. Cross, and "Provençal 'huelh de veire' and 'sec . . . son agre'" (*MLN*) by U. T. Holmes.

FRENCH

Medieval.—E. C. Armstrong, D. L. Buffum, B. Edwards and L. F. H. Lowe have edited *The Medieval French 'Roman d'Alexandre,' Vol. II: Version of Alexandre de Paris Text* (Prin.). *'Proverbes en Rimes': Text and Illustrations of the Fifteenth Century from a French Manuscript in the Walters Art Gallery* (Johns Hopkins Press) represents the work of G. Frank and D. Miner. Articles in the field of Old French include: "Un Album de Rhetoriquers" (Harv.) by M. Françon; "Brunetto Latini's *Trésor:* Latin Sources on Natural Science" (*S*) by F. J. Carmody; "Jean de Meun et Chaucer, Traducteurs de la *Consolation* de Boèce" (*PMLA*) by V. L. Dedeck-Héry; "Source Problems of the *Chétifs,* a Crusade Chanson de Geste" (*RR*) by U. T. Holmes, J. and W. M. McLeod; "Notes sur 'Guillaume de Dole'" (*MLN*) and "Sur la Date de 'Guillaume de Dole'" (*RR*) both by L.-A. Vigneras; "The *Dámusta Saga* and French Romance" (*MP*) by M. Schlauch; "The Historical Setting of 'Robert Veez de Perron'" (*MLN*) by S. Painter; "Bertrand de Born's Sirventes against King Alfonso of Aragon" (*MP*) by L. E. Kastner, and "The Cemetery Incident in Chrétien and its Celtic Original" (*RR*) by M. F. Speyer.

Sixteenth Century.—A limited interest in this century is manifest by the following articles: "Rondeaux du Ms 402 de Lille" (*PMLA*) by M. Françon; "Platonism in Pontus de Tyard's *Erreurs Amoureuses* (1549)" (*MP*) by R. V. Merrill; "The French Renaissance Gallicized: an Emphasis on National Tradition" (*SP*) by W. L. Wiley; "La Date de l'*Oraison de l'ame fidèle* et son importance por la Biographie Morale de Marguerite de Navarre" (*MLN*) by E. F. Meylan, and "Montaigne as a Source of La Fontaine's Fable: *La mort et le mourant*" (*PMLA*) by P. C. King.

Seventeenth Century.—H. C. Lancaster has made available "Five French Farces. 1665–1694?, a Critical Edition" (JHS). Interest in Racine is shown by the following: "Racine's *Andromaque:* A Study of Source" (*PMLA*) by C. Dagley; "*Athalie:* The Tragic Cycle and the Tragedy of Joas" (*RR*) by E. E. Williams, and "Frédéric II appréciateur de Racine (*RR*) by F. Baldensperger. Other articles relative to the drama are: "German and French Dramatic Topics of the Seventeenth Century" (*SP*) by W. P. Friederich; "Molière and Jean Ribou" (*RR*) by H. C. Lancaster, and two articles by M. Baudin, "The Conqueror in Seventeenth Century French Drama" (*MLN*) and "The People in Seventeenth-Century French Tragedy" (*MLN*). C. B. Beall discusses "Deux Romans peu Connus du XVII^{e} Siècle Français" (*MLN*). Other studies include "La Mesnardière's *Poétique* (1639)" (*JHS*) by H. R. Reese; "La Bruyère and Mrs. Crackenthorpe's 'Female Tatler'" (*PMLA*) by P. B. Anderson; "A Seventeenth Century Precursor of Mgr. Myriel" (*FR*) by J.-M. Carrière, and "Chapelain and the Genesis of the French Academy" (*MP*) by C. Searles.

Eighteenth Century.—The following six articles on Voltaire and his work attest his appeal to scholars;

"The Hound, the Bay Horse, and the Turtle-Dove: A Study of Thoreau and Voltaire" (*PMLA*) by E. Peairs; "A Note on the Arouet Voltaire Problem" (*SP*) L. M. Levin; "The Opinions of Voltaire Concerning Montesquieu's Theories of Roman Greatness" (*PQ*) by E. H. Price; "Rapports Probables entre le *Zadig* de Voltaire et la Pensée Stoïcienne" (*PMLA*) by E. Rovillain; "A Prototype of the Story in *Zadig* (Ch. III): 'Le Chien et le Cheval'" (*MLN*) by H. Loss; "Une Source de *Zadig* de Voltaire" (*MLN*) by E. Von der Mühll. Rousseau is represented by the following four articles: "A Contribution to the Study of the Descriptive Technique of Jean-Jacques Rousseau" (*JHS*) by M. L. Buchner; "Eighteenth Century English Reactions to the *Nouvelle Héloïse*" (*PMLA*) by J. H. Warner; "Diderot's Influence on Rousseau's First *Discours*" (*PMLA*) by L. G. Krakeur, and "Jean-Jacques Rousseau, les Déistes et les Pasteurs de Genève" (*RR*) by A. Schinz. Other articles are "Le Développement du Proverbe Dramatique en France et sa Vogue au XVIII[e] Siècle" (Cal.) by C. D. Brenner; "L'Evolution d'un Genre: Le Livret d'Opéra en France de Gluck à Révolution (1774–1793)" (Smith) by R. Guiet; "Beaumarchais and Clavijo" (*Hisp.*) by G. Rivera; "Parallels to Ideas in the *Lettres Persanes*" (*PMLA*) by A. S. Crisafulli; "The Relation of *Joseph* by Bitaubé to Goethe's *Hermann und Dorothea*" (*RR*) by V. Clayton; "Note on a Letter by Fontenelle" (*MLN*) by R. E. Pike, and "A Forgotten Participant in the Attack on the Convent: Madame de Genlis" (*MLN*) by L. G. Krakeur.

Nineteenth Century and Contemporary.—A. V. Roche has made a study of "Les Idées Traditionalistes en France de Rivarol à Charles Maurras" (Ill). A long and careful work by J. Spagnoli is *Social Attitude of Marcel Proust* (*IFS*). Shorter articles include "Vigny's *Elevations*" (*MLN*) by G. N. Henning; "A Substitute Religion: The Source of Vigny's Optimism" (*SP*) by S. H. Clarke; "A New Source for Balzac's *Contes Drolatiques*" (*MLN*) by G. M. Fess; "La Pratique et la Théorie du 'rondeau' et du 'rondel' chez Théodore de Banville" (*MLN*) by M. Françon; "D'où sort l'*Après-midi d'un Faune* de Mallarmé?" (*MLN*) by A. Schinz; "Two Naturalistic Versions of Genesis: Zola and Pardo Bazán" (*MLN*) by D. F. Brown. R. Turner concludes his article, begun last year, on "Hugo and Baudelaire" (*FR*). Further studies of interest are: "British Criticism of Daudet, 1872–97" (*PMLA*) by A. R. Favreau; "Remy de Gourmont Critique" (*PMLA*) by M. Denkinger; "Edouard Rod and André Gladès" (*PMLA*) by J. R. Wadsworth; "François de Curel: Observations sur la Création Dramatique" (*PMLA*) by A. Lévêque. A longer study is *Sources of the Play Cyrano de Bergerac* (IFS) by H. Ryland, as is also "Goethe in Modern France, with Special Reference to Maurice Barrès, Paul Bourget and André Gide" (Ill) by F. E. Ross. Further articles treating of modern writers are "Gide, Mauriac et Cocteau, Portraitists of the Adolescent" (*FR*) by J. O'Brien; "Proust and the Flaubert Controversy" (*RR*) by D. W. Alden; "A Rapprochement: M. André Gide and Lautréamont" (*RR*) by J. O'Brien; "Supervielle, a Super-realist" (*FR*) by H. A. Holmes; "The Dramatic Art of Charles Vildrac" (*FR*) by C. H. Bissell; "Paul Valéry et le Concept de Poésie" (*FR*) by A. Gaudin; "Rudyard Kipling and France" (*FR*) by A. H. Rowbotham, and "Quatrelles, a Humorist among the Naturalists" (*FR*) by C. C. Gullette.

ITALIAN

Dante.—Research is throwing light each year on obscurities in Dante lore. The following articles were printed this year: "Did Dante Know the Vision of St. Paul?" (Harv) by T. Silverstein; "A Note on the XXth Canto of the *Inferno*" (*Ital*) by C. Grimm; "A Dante Note: 'heliotropium'" (*RR*) by V. Cioffari; and four contributions by H. D. Austin: "What Form of Uguiccione da Pisa's Lexicon did Dante Use?" (*RR*), "The Debatable Dante Metaphors" (*PMLA*),

"'Letargo' (*Par.*, xxxiii, 94)" (*MLN*), and "Drawn or Hurled?" (*Ital*).

Other Studies.—"Boccaccio's Archeological Knowledge" (*AJA*) by C. C. Coulter; "Petrarch and Heraclitus once more" (*S*) by G. Post; "Bandello and 'Clizia'" (*MLN*) by O. H. Moore; "A Possible Source for E. A. Butti's *Castello del Sogno*" (*MLN*) by H. L. Norman; "The Identity of Francesco Cieco de Ferrara" (*PMLA*) by R. F. French; "An Unmentioned Elizabethan Opponent of Machiavelli" (*Ital*) by D. C. Allen. The centenary of Leopardi's death is recalled by the following: "Leopardi and Epictetus" (*Ital*) by W. A. Oldfather; "I 'natio loco' nella lirica de G. Leopardi e di G. Carducci" (*Ital*) by Getulio Moroncini; "Due Epicini del Chiabrera e del Leopardi" (*Ital*) by Gaetano Moroncini.

SPANISH

Medieval.—This period is represented by two articles: "Bernardo del Carpio" (*Hisp*) by W. M. Langford, and "A Study of the Origins of the Legend of Bernardo del Carpio" (*HR*) by A. B. Franklin.

Golden Age.—A sound article on "Erasmus and the Fate of a Liberalistic Movement prior to the Counter Reformation" (*HR*) is by R. Schevill. W. J. Entwistle discusses the "Cancionero de Baena, 226, V.2" (*HR*). For studies concerned with the sixteenth century the following are worthy of note: an edition of a "Farsa Hecha por Alonso de Salaya" (*PMLA*) by J. E. Gillet; "A Note on Bartolomé Aparicio" (*HR*) by the same writer; "Torres Naharro and the Spanish Drama of the Sixteenth Century, II" (*HR*) also by J. E. Gillet; "Two Notes on the Plays of Torres Naharro" (*HR*) by J. P. W. Crawford; "Juan Cirne and the *Celestina*" (*HR*) by C. Eyer; "The Influence of Senecan Tragedy in the Plays of Juan de la Cueva" (*SP*) by E. S. Morby; "The 'Vice' in Early Spanish Drama" (*S*) by T. E. Allison; "Fecha de la Muerte de Francisco Escobar" (*HR*) by F. Sánchez y Escribano, and "Aljamiado Prophesies" (*PMLA*) by J. N. Lincoln.

The Golden Age drama has received consideration by several scholars. A helpful article is "Objective Criteria for Judging Authorship and Chronology in the 'Comedia'" (*HR*) by S. Griswold Morley. Lope de Vega is treated in the following studies: "More Conjectures Regarding the Identity of Lope de Vega's 'Amarilis Indiana'" (*Hisp*) by I. A. Leonard; "La Fecha de *la Francesilla*" (*HR*) by J. H. Arjona; "The Sources of Lope de Vega's Erudition" (*HR*) by A. K. Jameson; "Lope's Belardo-Lucinda Plays" (*HR*) by C. Bruerton; "Apunte Cronológico sobre *El Arenal de Sevilla* de Lope" (HR) by J. H. Arjona, and by the same writer "La Fecha de *Ejemplo de Casadas y Prueba de la Paciencia* de Lope de Vega" (*MLN*). Other studies of the drama and dramatists include: "On the 'Segunda Parte' of Calderón (*HR*) by H. C. Heaton; "Góngora and Calderón (*HR*) by E. J. Gates; "Versos Desconocidos de una Comedia de Calderón" (*PMLA*) by S. N. Treviño; "The Guzmán Edition of Tirso de Molina's Comedias" (*HR*) by A. H. Bushee; "Another Instance of Tirso's Self-Plagiarism" (*HR*) by E. H. Templin; "Moreto's Span of Dramatic Activity" (*HR*) by R. L. Kennedy; *"La Renegada de Valladolid"* (*RR*) by R. Kennedy, and "A Seventeenth Century Dramatist: Ambrosio de los Reyes y Arce" (*HR*) by R. J. Michels.

Cervantes studies include *The Imitations of 'Don Quixote' in the Spanish Drama* (Penn) by G. G. La Grone; "Substantive Address Used between Don Quijote and Sancho Panza" (*HR*) by H. P. Houck, and "El Golfo de Narbona y la Isla Infame en el Viaje del Parnaso Cervantino" (*HR*) by M. Romera-Navarro. Attention is also called to the following: "The Collecting of Proverbs in Spain Before 1650" (*Hisp*) by F. C. Hayes; "Sobre la Fecha de la Invención de la Décima o Espinela" (*HR*) by J. Millé y Giménez; "Four Seventeenth Century Translations of *Lazarillo de Tormes*" (*HR*) by E. R. Sims, and "A Picaresque Poem" (*HR*) by J. A. Bourne. The study by N. Alonso Cortés, "Don Vicente García de la Huerta" (*HR*)

has reference to the eighteenth century.

Modern.—"Notes on Espronceda's *Sancho Saldaña*" (*HR*) by N. B. Adams; "Gustavo Adolfo Bécquer as a Journalist" (*Hisp*) by P. H. Cummings, and "Reconstruction of a Decisive Period in Larra's Life (May–November 1836)" (*HR*) by F. C. Tarr really belong to the first half of the nineteenth century. H. S. Saenz has an article on "Visión Galdosiana de la Religiosidad de los Españoles" (*Hisp*). A modern poet is treated by Angel del Rio in "La Poesía Española de Juan José Domenchina" (*RHM*).

Spanish American literature is represented by "An Early Peruvian Adaptation of Corneille's *Rodogune*" (*HR*) by I. A. Leonard; "Scott's Influence on José Mármol's *El Cruzado*" (*Hisp*) by S. Cuthbertson; "The 'Americanismo' of Rubén Darío" (*Hisp*) by M. Nunn; "The First Published Writings of Manuel Gutiérrez Nájera" (*HR*) by E. K. Mapes, and "Some Tendencies in the Mexican Short Story Today" (*Hisp*) by D. Kress.

FOREIGN INFLUENCE

French.—Attention is called to the following: "El Peso de la Influencia Francesa en la Renovación de la Prosa Hispanoamericana" (*Hisp*) by D. Kress; "A Seventeenth Century French Source for Hurd's *Letters on Chivalry and Romance*" (*PMLA*) by V. M. Hamm, and "Keats, Diodorus Siculus, and Rabelais" (*MP*) by J. L. Lowes.

Italian.—*Boccaccio's Story of Tito e Gisippo in European Literature* (IFS) by L. Sorieri; "French and English Echoes of a Descriptive Passage in Tasso" (*MLN*) by S. Pitou, Jr.

Spanish.—"Voltaire's *Candide* and Gracián's *El Criticón*" (*PMLA*) by D. M. McGhee. "Bilingual Dictionaries of Shakespeare's Day" (*PMLA*) by D. T. Starnes has an interest especially for students of Spanish, while folklorists will welcome the versions of J. B. Rael in "The Theme of the Theft of Food by Playing Godfather in the New Mexican Folklore" (*Hisp*).

LATIN LITERATURE

By John W. Spaeth, Jr.

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Additions to this valuable series, published by the Harvard University Press, include the following: *Ammianus Marcellinus,* vol. 2, by J. C. Rolfe; a volume containing Cicero's *In Catilinam, Pro Sulla, Pro Flacco,* and *Pro Murena,* by L. E. Lord; and *Tacitus,* vols. 3 and 4 (containing Books 4–6 and 11–16 of the *Annales*) by J. Jackson.

CLASSICAL LATIN AUTHORS *

A dissertation by Norma L. Drabkin (Geneva, N.Y., 1937) treats in detail *The Medea Exul of Ennius.* T. Frank's "Notes on Plautus" (*A.J.P.* 58, 345 ff.) deal with passages in the *Aulularia* and *Mostellaria* and suggest that Varro's phrase *artifices scenici,* in the account of Plautus' life, means presumably actors, possibly actor-managers, not stage-hands. J. N. Hough discusses at length the structure of the *Asinaria* of Plautus (*ibid.,* 58, 19 ff.), O. Skutsch the first scene of the *Epidicus* (*C.P.* 32, 360 ff.), and G. E. Duckworth the verse structure of *Epidicus* 25–26 (*ibid.,* 63 ff.). E. S. McCartney explains the superstitions mentioned in Terence's *Phormio* 705–710 (*C.J.* 32, 557 ff.).

Lucretius' connection with Roman satire is treated in summary by C. Murley (*P.A.P.A.* 67, xliv), and I. E. Drabkin contributes "Notes on Lucretius II, 479–82" (*C.P.* 32,

* Periodicals are abbreviated as follows: *A.J.A., American Journal of Archaeology; A.J.P., American Journal of Philology; C.B., Classical Bulletin; C.J., Classical Journal; C.P., Classical Philology; C.W., Classical Weekly; H.S.C.P., Harvard Studies in Classical Philology; P.Q., Philological Quarterly; Spec., Speculum; T.A.P.A., Transactions of the American Philological Association; P.A.P.A., Proceedings of the same.*

258 ff.). *Metre and Diction in Catullus' Hendecasyllabics* (Chicago, 1936) is a dissertation by T. Cutt. W. P. Barnds, in "Poems of Lament in Catullus" (*C.J.* 33, 88 ff.), compares the direct utterance of Catullus with other poetic laments, ancient and modern. W. Allen, Jr. compares the wording of Catullus 49 with passages in Sallust's *Bellum Catilinae* (*ibid.*, 32, 298). Charlotte E. Goodfellow presents briefly a study of certain aspects of Cicero's *Pro Balbo* (*P.A.P.A.* 67, xxxvi). Lenore K. Geweke continues her study of the correspondence with Atticus in "Notes on the Political Relationship of Cicero and Atticus from 56 to 43 B.C." (*C.J.* 32, 467 ff.), and Lily R. Taylor's article "On the Chronology of Cicero's Letters to Atticus, Book XIII" (*C.P.* 32, 228 ff.) attempts especially an arrangement of the letters that belong to August of the year 45 B.C. T. Frank proposes to solve two Ciceronian cruces by emending to *Zarbieni* in *Ad Att.* 2,4,2 and *lascieram* in 2,7,1 (*A.J.P.* 58, 459 ff.). C. W. Keyes argues (*ibid.*, 403 ff.), contrary to the generally accepted theory, that all available indications tend to show that Cicero's *De Legibus* is a complete work. It is the contention of T. R. S. Broughton (*T.A.P.A.* 67, 34ff.) that Sallust, in the *Bellum Catilinae*, "was essentially fair to Cicero, although influenced at one point by the growth of the legend of Cato." E. T. Salmon contributes to the discussion concerning the authorship of the *Second Sallustian Suasoria* (*C.P.* 32, 72 ff.). In *T.A.P.A.* (67, 64 ff.) R. G. Kent offers emendations for the text of Varro's *De Lingua Latina*.

"A Study of Dido and Aeneas" by Verda B. Evans (*C.J.* 33, 99 ff.) follows a well-worn path. Three public lectures by E. K. Rand have been published under the title of *Horace and the Spirit of Comedy* (Rice Institute *Pamphlet* 24, 1937). *An Analytical Study of Horace's Ideas* is a treatise by O. E. Nybakken (Iowa Studies in Classical Philology 5; Scottsdale, Pa., 1937). W. P. Horwood contributes an interesting note on Horace's *Satires* 1, 5, 1–24, dealing with the poet's nocturnal journey by canal boat (*C.J.* 32, 225 ff.). E. A. Hahn arranges Horace's use of concrete examples into several categories (*P.A.P.A.* 67, xxxviii f.), and J. J. H. Savage writes in abstract on "Horace's Odes and the Roman Calendar" (*ibid.*, xlvi). L. A. MacKay offers a reconstruction of Propertius 2, 30 (*C.J.* 33, 163 f.), and E. F. D'Arms, under the title of "Lynceus and the Muses" (*ibid.*, 32, 482 ff.) proposes a reasonable re-wording of Propertius 2, 34, 31 f. Two recent dissertations on Ovid are Mary M. Avery's *The Use of Direct Speech in Ovid's Metamorphoses* (Chicago, 1937) and Margaret W. Herr's *The Additional Short Syllables in Ovid* (Philadelphia, 1937). J. L. Catterall proposes (*C.P.* 32, 266) a neat correction of Livy 24, 26, 10.

Seneca's Conception of the Stoic Sage as Shown in His Prose Works is a Canadian dissertation by J. H. L. Wetmore (Alberta, 1936). H. W. Kamp contends (*C.J.* 32, 529 ff.) that Seneca "had but one wife and that he married her before his exile in A.D. 41." W. H. Alexander believes that the reading *merum* for *verum* is justified in *Apocolocyntosis* 1 (*A.J.P.* 58, 343 ff.). An annotated edition of *Selected Letters of Pliny* has been prepared by H. M. Poteat (Boston: Heath, 1937). Connotations in the Tacitean phrase *solitudinem faciunt* (*Agr.* 30) are explained with enlightening parallels by Eva M. Sanford (*C.P.* 32, 367 f.). W. C. Helmbold suggests (*ibid.*, 159) the reading *latus . . . deducet* for Juvenal 1, 157.

LATER LATIN LITERATURE, INCLUDING MEDIEVAL

In *A.J.P.* (58, 392 ff.) G. B. A. Fletcher contributes a series of textual notes on Ammianus Marcellinus. Festus' statement about the *sex suffragia* (p. 452 Lindsay) is given a new interpretation by H. Hill (*ibid.*, 458 f.). C. C. Mierow surveys appreciatively the life and literary activity of Jerome (*C.J.* 33, 3 ff.), and W. J. McGarry presents an essay on "St. Jerome's Vulgate" (*C.B.* 14, 17 f.). The dissertation of Mary S.

Muldowney deals with *Word-Order in the Works of St. Augustine* (Washington, 1937). Sister Mary E. Keenan assembles the more striking and characteristic allusions in Augustine's works to the medical profession (*T.A.P.A.* 67, 168 ff.).

Ruth E. Messenger traces the "*descensus* theme" (the legend of the descent of Jesus into Hell after the Resurrection) as it appears in medieval Latin hymns and considers certain literary features of it (*T.A.P.A.* 67, 126 ff.). *A Medieval Latin Version of Demetrius' De Elocutione* is the subject of a dissertation by Bernice V. Wall (Washington, 1937). W. C. Korfmacher's *Othloni Libellus Proverbiorum* (Chicago, 1936) is a new critical edition. In *Spec.* (12, 215 ff.) W. H. Cornog publishes "The Poems of Robert Partes," editing the text as contained in a manuscript of the British Museum. A. Steiner (*ibid.*, 81 ff.) considers the authorship of the 13th century *De Disciplina Scholarium* and concludes that it must still be regarded as anonymous.

In *P.Q.* (16, 307 ff.) H. E. Wedeck discusses the Latin verse of "Casimir, the Polish Horace," and K. C. M. Sills contributes (*C.J.* 32, 417 ff.) a pleasant essay on Milton's Latin poems.

LITERARY HISTORY AND CRITICISM

After examining critically certain features of technique found in both Greek and Roman drama, P. W. Harsh concludes (*A.J.P.* 58, 282 ff.) that these criteria, formerly regarded as valid for making distinctions between Greek and Roman workmanship, should now be abandoned. H. W. Prescott continues his study of "Silent Rôles in Roman Comedy" with a discussion of silent actors (*C.P.* 32, 193 ff.). In *C.J.* (32, 541 ff.) J. W. Spaeth, Jr., writes of "Caesar's Friends and Enemies among the Poets." T. Frank emphasizes the political and social import of the lost tragedies of Curiatius Maternus and agrees that this poet may well have written the *Octavia* (*A.J.P.* 58, 225 ff.).

In *T.A.P.A.* (67, 114 ff.) C. A. Forbes cites the recorded cases in ancient history of the intentional burning of books. H. V. Canter assembles (*C.P.* 32, 131 ff.) numerous references in Greek and Latin poetry to the ill will of the gods and in *P.A.P.A.* (67, xxxii) summarizes a study of "'Laus Temporis Acti' in Latin Literature." W. C. McDermott discusses (*T.A.P.A.* 67, 148 ff.) the literary treatment of the ape in Roman literature from Ennius to the *Anthologia Latina.*

Among studies of later classical scholarship and influence H. R. Joliffe's "Bentley *vs.* Horace" (*P.Q.* 16, 278 ff.) explains the unreliability of Bentley's numerous emendations of the text. In *Studies in Philology* (34, 383 ff.) E. S. Morby writes on "The Influence of Senecan Tragedy in the Plays of Juan de la Cueva." J. H. Finley, Jr. investigates at length the influence of Horace on certain of Milton's sonnets (*H.C.S.P.* 48, 29 ff.), and J. P. Pritchard points out numerous references in Milton to the Church fathers (*C.J.* 33, 79 ff.). The influence of Lucretius on Keats is the subject of a study by J. H. Wagenblass in *Modern Language Review* (33, 537 ff.). Douglas Bush's *Mythology and the Romantic Tradition in English Poetry* (Cambridge, Mass., 1937) is a penetrating study of the significance of classical mythology in English and American poetry of the Nineteenth and Twentieth centuries. In *The Cult of Antiquity and the French Revolutionaries* (Chicago, 1937) H. T. Parker studies the influence upon the "Revolutionaries" of Cicero, Sallust, Livy, and Tacitus.

PALAEOGRAPHY AND TEXT-HISTORY

In the *Yale University Library Gazette* (11, 81ff.) W. Allen, Jr. describes "The Yale Manuscript of Tacitus (Codex Budensis Rhenani)", and in *Spec.* (12, 382ff.) he probes into the technique of Beatus Rhenanus as an editor of Tacitus and Livy. L. W. Jones reaffirms (against F. Granger) his earlier opinion that the London manuscript of Vitruvius was written at Cologne, probably about 850 (*ibid.*,

257ff.). Two articles by Dorothy M. Schullian (*C.P.*32,349ff. and *Spec.* 12,-516ff.) deal with the manuscript tradition of Valerius Maximus, and a third (*C.P.*32,70ff.) discusses the importance of three manuscripts of the anonymous *Anthology of Valerius Maximus and A. Gellius.* L. Meagher is the author of a dissertation on *The Gellius Manuscript of Lupus of Ferrières* (Chicago, 1936). Blanche B. Boyer discovers in a Paris manuscript (Lat.7520) a fragment of Codex Bern 207 of the *Corpus Grammaticorum* (*C.P.*32,113ff.) A. Diller elucidates briefly the value of "incipient errors" in manuscripts as useful evidence of derivation (*T.A.P.A.*67,232ff.). J. E. Dunlap writes on "The Earliest Editions of the *Letters* of Symmachus" (*C.P.*32,329ff.), dating the *editio princeps* (Venice) between 1503 and 1510.

LANGUAGE AND GRAMMAR

In *C.P.* (32,44ff.) P. W. Harsh investigates the precise meaning in Latin literature of the terms *angiportum, platea,* and *vicus.* Dorothy Paschall's article on "The Origin and Semantic Development of Latin Vitium" (*T.A.P.A.* 67,219ff.) is concerned especially with an analysis of the word's significance in the augural language. In *H.S.C.P.* (48,181ff.) J. Whatmough asserts, against Livy (5,33,11), that the Raeti were not of Etruscan origin, since their dialect contains much that is distinctly Indo-European. In *C.P.* (32,267f.) he reinforces his previous contention that the common Latin phrase *id genus* (and the like) is a "parenthetic nominative." E. T. Salmon emphasizes (*C.J.* 33,69ff.) the close linguistic relationship existing between Roumanian and Latin.

EPIGRAPHY

In "The New Elogium of Julius Caesar's Father" (*A.J.P.* 58,90ff.) T. Frank proposes readings for lost portions of a new inscription found at Rome a few years ago. Lily R. Taylor, in her article "Tiberius' *Ovatio* and the *Ara Numinis Augusti*" (*ibid.,* 185ff.), suggests restorations for Jan. 16 and 17 of the *Fasti Praenestini.*

POLITICAL, SOCIAL, AND ECONOMIC HISTORY

The Foundations of Roman Italy by J. Whatmough (London, 1937) is a careful study based upon linguistic and archaeological evidence. Inez S. Ryberg investigates "The Esquiline Necropolis in the Fifth Century B.C." (*A.J.A.* 41,100ff.). K. Latte believes that the Roman questorship originated in the Fifth century as an imitation of a similar Greek office and probably had no connection with the older *quaestores parricidii* (*T.A.P.A.* 67,24ff.). J. A. O. Larsen discusses the Peace of Phoenice and the outbreak of the Second Macedonian War (*C.P.* 32,15ff.), V. Scramuzza the publican societies in Sicily in 73–71 B.C. (*ibid.,* 152ff.), and T. R. S. Broughton the reasons for an interruption of the "cistophoric" coinage at Ephesus from 67 to 58 B.C. (*A.J.A.* 41,248f.). In *C.P.* (32,144ff.) G. Downey dates the visit of Q. Marcius Rex at Antioch (67 B.C.) and discusses its purpose. W. Allen, Jr. maintains (*C.J.* 33,107ff.) that P. Clodius Pulcher and his sisters adopted the unusual spelling *Clodius* for the purpose of displaying their political affiliations.

Eva M. Sanford presents an illuminating study of contrasting views held concerning the stability or impending dissolution of the Roman Empire, with special attention to the period from Nero to M. Aurelius (*A.J.P.* 58,437ff.), and in a second article, "Nero and the East" (*H.S.C.P.* 48,75ff.), investigates "the extent to which oriental ideas known to have been current throughout the Empire and at Rome may have affected Nero's view of his rôle." Contrary to the more orthodox view, R. M. Geer concludes (*T.A.P.A.* 67,47ff.) that the imperial succession was as definitely dynastic from Nerva to Commodus as had been true in the preceding century. E. T. Salmon deals with several problems connected with Trajan's conquest of Dacia (*ibid.,* 83ff.). Grace H. Macurdy is the author of *Vassal-Queens and Some Contemporary Women in the Roman Empire* (Baltimore, 1937) and O. L. Spaulding of a little book entitled

Pen and Sword in Greece and Rome (Princeton, 1937).

Two additional volumes of *An Economic Survey of Ancient Rome*, under the general editorship of T. Frank, have recently appeared. Volume 2, by A. C. Johnson, has the sub-title *Roman Egypt to the Reign of Diocletian* (Baltimore, 1936), and Volume 3 contains sections on *Roman Britain* by R. G. Collingwood, *Roman Spain* by J. J. Van Nostrand, *Roman Sicily* by V. M. Scramuzza, and *La Gaule Romaine* by A. Grenier (Baltimore, 1937). In the *Journal of Roman Studies* (27,72ff.) T. Frank contributes "Notes on Roman Commerce." H. Comfort continues his studies of the *terra sigillata* ware found in various parts of the Roman Empire (*A.J.A.* 40,437ff. and 41,406ff.), and V. Müller discusses (*ibid.* 41,250ff.) the origin of various types of the Roman basilica.

PHILOSOPHY AND RELIGION

N. W. De Witt supplements his previous investigations into Epicureanism with "Epicurean *Contubernium*" (*T.A.P.A.* 67,55ff.) and "The Epicurean Doctrine of Gratitude" (*A.J.P.* 58,320ff.). *The Imperial Cult under the Flavians* (Stuttgart-Berlin, 1936) is a monograph by K. Scott. A. D. Nock writes on "The Genius of Mithraism" (*Journal of Roman Studies* 27,108ff.), and H. M. Poteat contributes observations on "Rome and the Christians" (*C.J.* 33,134ff.). In the *Memoirs of the American Academy in Rome* (15,5ff.), G. K. Boyce presents a fully documented "Corpus of the Lararia of Pompeii."

GENERAL

Consideration of the place of classical studies in the changing school and college curricula has evoked expressions of opinion from many writers, among them D. S. White (*C.J.* 3[illegible] 267ff.), Mildred Dean (*ibid.*, 352ff.), A. P. Wagener (*ibid.*, 455ff.), Irene [illegible] Crabb (*ibid.* 517ff.), M. B. Ogle (*ibid.* 534ff.), W. L. Carr (*ibid.* 33, 145ff.), and W. H. Alexander (*C.W.* 31,13ff.). S. P. Young (*Journal of Higher Education* 8,241ff.) and W. H. Alexander (*C.W.*30,127ff.) make proposals for the teaching of the ancient classics in translation, while E. Riess (*ibid.* 187ff.) upholds the cause of the older discipline. W. B. Aspinwall writes on "The Preparation of Teachers of Latin for Secondary Schools" (*C.J.* 32,339ff.) and H. A. Cohen on "English Grammar and the Teaching of Latin" (*ibid.* 393ff.). The "Report of the Commission Appointed by the College Entrance Examination Board to Study Examinations in Latin" appears, together with a specimen examination, in *C.W.* (30,248ff.), and W. J. Oates explains the purpose of the proposed examination (*ibid*, 284ff.). The April number of *Education* is devoted to a symposium on the teaching of the classics, with articles by C. C. Mierow, A. P. Wagener, Dorothy M. Robathan, Mildred Dean, M. E. Hutchinson, and others.

With vol. 30 *C.W.* has adopted a radically altered policy. Under the direction of its new editor, C. J. Kraemer, Jr., the periodical has become a most valuable bibliographical aid, with its numerous book reviews, its extensive "Abstracts of Articles," and its full and well-annotated lists of "Recent Publications." In vol. 31 (70f.) a new department, "In the Classroom," has been added. *C.J.* inaugurates in its December number (33,188ff.) a department of "Classical Articles in Non-Classical Periodicals," compiled by A. F. Pauli and J. W. Spaeth, Jr., thus continuing, slightly modified, the lists which formerly appeared in *C.W.*

GREEK LITERATURE

By William Stuart Messer

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Accessions of the year were: *Aristotle, Parts of Animals, etc.,* A. L. Peck and E. S. Forster; *Aristotle, Problems* (vols. 1, 2), W S. Hett and *Rhetorica ad Alexandrum,* H. Rackham; *Athenaeus* (vol. 6), C. B. Gulick; *Demosthenes, Private Orations* (vol. 1), A. T. Murray; *Dionysius of Halicarnassus, Roman Antiquities* (vol. 1), E. Cary; *Josephus* (vol. 6), R. Marcus; *Lucian* (vol. 5), A. M. Harmon; *Philo* (vol. 7), F. H. Colson; *Plutarch, Moralia* (vol. 10), H. N. Fowler. In press are: *Aristotle, Organon* (vol. 1), H. P. Cooke and H. Tredennick; *The Minor Attic Orators* (vol. 1), K. J. Maidment.

LANGUAGE, LITERATURE, AND LITERARY CRITICISM

In *AJP*,58,257 G. M. Calhoun assails the subjective critics of Homer who find an Ionic philosophical scepticism in the Olympic scenes to support their theories of composition. J. A. Scott, (*TAPA*,67,1,) contends that the first book of the Odyssey is as early as the rest of Homer's poetry on the basis of language, social conditions, and its relation to the other books. M. Parry (for a tribute to the lamented Parry see H. Levin, "Portrait of a Homeric Scholar," *CJ*,32,259) in *CP*,32,59 asserts that Homer's "winged words" is a colorless stereotype. A. B. Lord in *TAPA*,67,106 finds no support, in the singer's rests in modern South-slavic heroic song, for the assumption of fixed chants in Homer. Other papers on Homer are: "When Homer Smiles" by I. Nye, (*CJ*,33,25); "Hellenic Genealogies in Homer" by W. R. Bryan, (*PAPA*,67xxxi); "Integration and Homeric Hymn to Apollo" by W. F. J. Knight, (*PAPA*,67,xli).

In *Revue de Philologie*,11,5 J. E. Harry writes on "La Porte à la Chambre de la Reine," interpreting Soph., O.R.,1244–5 and 1261–2. J. P. Carroll in *CJ*,32,406 explains the greater ratio of questions in the O.R. as intended to suggest the riddler's mind of Oedipus. In *PAPA*,67,xxxv F. P. Donnelly illustrates how Soph. in the Oedipus secures true tragedy by a universal use of contrast. In "Antigone 904–920" W. R. Agard defends the authenticity of this passage against Jebb and others, (*CP*,32,263). H.D. translated from the Greek *Euripides, Ion* (Houghton, Mifflin, 1937). P. W. Harsh in *PAPA*,67,xxxix would restore to Euripides many lines hitherto rejected because of their repetition in the same play. In *GP*,32,67 A. C. Schlesinger holds that Euripides accepts human sacrifice as part of the machinery of the legend in the Hecabe. In two related articles, *AJP*,58,294 and *TAPA*,67,296, the same writer treats of parodies in Aristophanes and lists the instances. J. T. Allen contributes "Aristophanes and the Pnyx" in Univ. of Calif. *Publications in Class. Phil.*, xii,2. Of importance to New Comedy is the denial by P. W. Harsh, (*AJP*, 58,282), that crudities, indecencies, plot misconstruction, etc, necessarily indicate Roman elements in Latin comedy. Light is thrown upon the Poetics by R. A. Pack in "A Passage in Alexander of Aphrodisias Relating to the Theory of Tragedy," (*AJP*, 58,418).

"Gorgias' Theories of Poetry" are subjected to re-examination by T. S. Duncan in *PAPA*,67,xxxiv. J. P. Pritchard in "Aristotle's Influence upon American Criticism," (*TAPA*, 67,341), traces a century of growing interest here in the Aristotelian tradition. B. Einarson employs Aristotle's Protrepticus to throw light on the ob-

* Abbreviations: *AJA, American Journal of Archaeology; AJP, American Journal of Philology; CJ, Classical Journal; CP, Classical Philology; CW, Classical Weekly; HSCP, Harvard Studies in Classical Philology; TAPA, PAPA, Transactions, Proceedings of the American Philological Association.* Titles of books, monographs, and periodicals are italicized; those of articles are in quotation marks.

scurities of structure in the Epinomis, incidentally pronouncing the latter spurious (*TAPA*,67,261). H. L. Tracy, (*CJ*,33,153), perceives elements of similarity in some of the dialogues of Plato and the Roman satura. V. C. B. Coutant publishes an English translation with introduction and full notes of *Alexander of Aphrodisias, Commentary on Book iv of Aristotle's Meteorologica* (Diss. privately printed. N.Y., 1936).

K. von Fritz, (*TAPA*,67,315), sketches, around the few dates in his life definitely ascertainable, the development of method in Herodotus. In *PAPA*,67,xxxiv H.N. Couch examines the Thucydidean dramatic device of introducing anonymous characters to comment on a crisis. *Last Flowers, A Translation of Bion and Moschus* by H. H. Chamberlin (Harvard, 1937) are verse renderings, not entirely successful, by the translator of Theocritus. M. J. Boyd writes on "The Chronology in Porphyry's Vita Plotini" in *CP*, 32,241. C. M. Bowra attempts the solution of the difficulties of Pythian II, (*HSCP*,48,1). H. V. Canter, *CP*,32, 131, writes on "Ill Will of the Gods in Greek and Latin Poetry," classifying three hundred passages. F. O. Copley analyzes "The Pathetic Fallacy in Early Greek Poetry," (*AJP*, 58,194). D. Bush presents a survey of *Mythology and the Romantic Tradition in English Poetry* (Harvard, 1937). W. E. Weter deals with the *Encouragement of Literary Production in Greece from Homer to Alexander* (Diss. Chicago, 1936). A rather uncritical work is *The Greek Language in its Evolution* (Macmillan, 1936) by A. F. Semenov. In *CP*,32,121 and 305 W. Petersen writes on "The Greek Masculines in Circumflexed *-ᾶς*" and "Greek Place Names in *-(e)ōn*, Genitive *-(e)ônos*." In *PAPA*,67,xl F. L. Highbarger summarizes a paper on the interpretation of passages in Theognis and in *PAPA*, 67,xliii, and H. W. Miller one on "The Participle in Isaeus."

MANUSCRIPTS AND TEXT-CRITICISM

In one of the outstanding books of the year, *Studies in the Text History of the Life and Fables of Aesc* (*APA* Monograph, Haverford, P 1936), B. E. Perry has published pr liminary studies to a future edition the Life and Fables. J. G. Winter an others have edited some 90 doc ments with introductions, notes, an translations in *Papyri in the Un versity of Michigan* (Univ. of Mic 1936). With ten plates, well illu trated, is *Papyri in the Princeton Un versity Collections*, Vol. xi (Prin 1936), edited by E. H. Kase. *T Rolls from Karanis*, Part 1, Text, e by H. C. Youtie and others (Uni of Mich., 1936), is to be followed b commentaries and detailed criticis (cf. also *AJP*,57,465). Another fascic has been added to *Monumen Palaeographica Vetera* by K. and Lake, *Dated Greek Minuscule Mss. t the Year 1200, vi. Mss. in Moscow an Leningrad* (Amer. Acad. Arts and Sc 1936).

Other notes and discussions unde this caption are: R. I. W. Westgat "The Text of Valla's Translation Thucydides," (*TAPA*,67,240); H. Youtie, "A 'Lost' Parallel for *echo noma*," (*CP*,32,155); A. Diller, "TH Vatopedi Ms. of Ptolemy and Strabo (*AJP*,58,174); stressing the value the Strabo portion; by the same, "In cipient Errors in Mss." (*TAPA*,67,232) H. Fränkel, "Note on a Passage i Menander," (*AJP*,58,456); L. A. Pos "Note on Prometheus, 52," (*AJ* 58,342); L. W. Daly, "Note on Lucia Philopseudes, 9," (*AJP*,58,342); H Horna, "Notes on Epicurus: Vatica Collection," (*CP*,32,266); G. B. Hus sey, "Defense of the Readings of *B* in Some Passages of Plato's States man," (*CP*,32,366).

HISTORY AND CIVILIZATION

Two textbooks in history have ap peared since last report: *Ancient His tory* by C. Perkins (Harper, 1936) two thirds devoted to the Orient an Greece, and *The Ancient World* b W. E. Caldwell (Farrar and Rinehart 1937). H. T. Bossert and W. Zschietz schmann in *Hellas and Rome* (Weyhe N.Y., 1936), with 82 pp. of text an 575 reproductions, present an illus trated cultural history of the antique In *Race Mixture among the Greek*

before Alexander (Univ. of Illinois, 1937) A. Diller publishes an account of the prehistoric period and of Athens to 322 B.C. J. M. Scammell in *CJ*, 32,281 writes on "The Races of the Eastern Mediterranean and Commerce between the Aegaean and Euxine Seas in the Heroic Age." B. D. Meritt, *Documents on Athenian Tribute*, is in press (Harvard). By the same author is an article in *AJP*,58,152, "The Athenian Assessment Decree" (of 425 B.C.). New light is thrown on Athenian slavery in "Greek Theories of Slavery from Homer to Aristotle" by R. Schlaifer, (*HSCP*,47,165), and "The Murder of Slaves in Attic Law" by G. R. Morrow, (*CP*,32,210). *Capital Punishment in Ancient Athens* by I. Barkan (Diss. Chicago, 1936) traces the tendency to minimize the gruesomeness of executions. A. P. Dorjahn in *CP*,32,341 cites interesting instances of intimidation in Athenian courts and applauds their infrequency.

Other papers are: "Cuneiform Texts and Hellenistic Chronology" by A. T. Olmstead, (*CP*,32,1); "A Decree of the Year of Koroibos," (*AJP*,58,329), and "Note on the Attic Year 307–6," (*AJP*, 58,220), both by W. K. Pritchett; "Alexander and the Stoics" by M. H. Fisch, (*AJP*,58,59), discusses the relationship of the Cynics, Alexander, and the Stoics; *"Ta epitheta"* by V. L. Johnson, (*AJP*,58,334); "Athenian Decrees of 216–212 B.C." by S. Dow, (*HSCP*,48,105); "Festivals of Rhodes" by I. R. Arnold, (*AJA*,40,432); "An Ordinance of the Salt Merchants" by A. E. R. Boak, (*AJP*,58,210), gives a general picture of the salt monopoly in the Fayûm in 47 A.D.; "Chryseis, A Study of the Evidence in Regard to the Mother of Philip V" by S. Dow and C. F. Edson, (*HSCP*,48,127); "The Peace of Phoenice and the Outbreak of the Second Macedonian War" by J. A. O. Larsen, (*CP*,32,15), contends that Rome forced Philip to war; "Thucydides v,18,5 and 6" by A. B. West, (*AJP*,58,157), geographical discussion on the Treaty of Nicias; "The Erythrae Decree" by L. I. Highby (*Klio*, Beiheft 36), a contribution to the early history of the Delian League; "Towns of Asia Minor" connected with the tribute of 425 B.C. by B. D. Meritt, (*AJP*,58,385); "A Yale Fragment of the Acts of Appian" by C. B. Welles, (*TAPA*,67,7); "A New Fragment of an Attic Treasure Record" by D. M. Robinson, (*AJP*, 58,38); "Some Remarks on the Travels of Herodotus" by L. Pearson, (*PAPA*, 67,xliv), suggests a method of determining what places, whose logoi he cites, were actually visited by Herodotus; "The Egyptian Expedition and the Chronology of the Decade 460–450 B.C." by W. Wallace, (*TAPA*,67,252). E. C. Moore in *The Story of Instruction* (Macmillan, 1936) deals with instruction in Sparta, Athens, Macedonia, and Rome.

PHILOSOPHY AND RELIGION

In *TAPA*,67,208 F. Solmsen discusses Plato's theology as set forth in the tenth book of the Laws. H. B. Hoffleit studies Plato's views on matter as a source of evil, (*AJP*,58,45). In *HSCP*,47,17 G. F. Else, "The Terminology of the Ideas," examines the Platonic and ante-Platonic meaning of *eidos* and *idea*. E. G. Caskey writes on "The Problem of the Earth in Plato's Timaeus" in *PAPA*,67,xxxii. Unconvincing is J. A. Notopoulos in "Movement in the Divided Line of Plato's Republic," (*HSCP*,47,57). L. Harap has an article, "The Imagination in Plato and Mr. M. W. Bundy," in *AJP*,58,222. Plato as guide for modern personal living is the subject of an enthusiastic homily, *What Plato Thinks*, by G. E. Mueller (Open Court, 1937). H. A. Lucks has published *The Philosophy of Athenagoras* (Cath. Univ. of Amer., 1937). W. C. Greene in "Fate, Good, and Evil in Pre-Socratic Philosophy," (*HSCP*, 47,85), adds to his studies of these same conceptions in early Greek poetry. "Some Presuppositions of Aristotle's Psychology" are enumerated by G. Boas in *AJP*,58,275. Two studies appear in *TAPA*,67,286 and *CP*,32,32 by H. J. Stukey, "Purity in Fifth and Fourth Century Religion" and "The Cyrenean Hikesioi," respectively. In *CP*,32,97 C. M. Bowra defines the function of "The Proem of Parmenides." In "Eastern Origins of Greek Philosophy," (*PAPA*,67, xxxix). E. A. Havelock stresses the

continuity of Greek thought with that of the East.

MISCELLANEOUS

An unusually distinguished series of papers, superbly illustrated, published with the assistance of the Rockefeller Foundation, is *Classical Studies Presented to Edward Capps* (Princeton, 1936). Suffering by contrast is *Philological Studies in Honor of W. Miller* (Univ. of Missouri Studies, vol. xi, 3). A. W. Gomme in *Essays in Greek History and Literature* (Blackwell, Oxford, 1937) has collected papers over a wide range, of which several have appeared in *CP*. W. A. Heidel has published an important book in a neglected field in *The Frame of Ancient Greek Maps* (Amer. Geog. Soc., N.Y., 1937). A competent monograph on love-names on Attic vases and in Greek literature with a prosopographia and a frank discussion of pederasty appears in D. M. Robinson and E. J. Fluck, *A Study of Greek Love-Names* (Johns Hopkins, 1937). C. R. Greer, *The Glory of Greece* (Penn. Pub. Co., Phila. 1937) is a mediocre travel book. E. Drabkin argues for the importance of the strictly scientific aspect of the Greek genius in *CW*,30,57.

Several books and articles on Greek medicine have appeared: F. B. Lund, *Greek Medicine* (Harper, 1936); W. R. Agard, *Medical Greek and Latin* (rev. ed. Harper, 1937); H. N. Couch, "The Medical Equipment of the Hippocratean Physician," (*TAPA*,67,191); L. Edelstein, "Greek Medicine in its Relation to Religion and Magic" (*Bull.* of the Inst. of the History of Medicine, vol. 3, 1937). C. A. Forbes (*TAPA*,67,114), lists the Greek and Latin books intentionally burned and decides the number small. W. C. Waddell issues "A Plea for Aesop in the Greek Classroom" in *CJ*,32,165. W. Jaeger diagnoses the trouble with the Classics in "Classical Philology and Humanism," (*TAPA*,67,363).

SEMITIC LANGUAGES AND LITERATURES

By Cyrus H. Gordon

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GENERAL

The year 1937 marked considerable progress in Semitic studies. The epoch-making Old Canaanite tablets from Ras Shamra continued to be published and interpreted. The important Old Babylonian tablets from Mari (middle Euphrates) and the sensational Hebrew ostraca from Lachish (sixth century B.C.) are about to appear. From all sides new discoveries provide the Semitist with pioneer problems, the solutions to which bid fair to illuminate obscure periods of history. But what is perhaps more important is the fact that standards of linguistic technique and critical historical method are rising rapidly.

IRAQ

The American excavations (1927–31) at Nuzi, near Kirkuk, have supplied the material for the most extensive body of publications of the year. *Nuzi*, Vol. II, by R. F. S. Starr (Harvard University Press) contains 144 plates with photographs and drawings of the excavations and objects found and 44 plans of the levels and architectural remains. (It is to be hoped that Vol. I, which constitutes the text, will appear soon.) The book is full of new material from the early fourth millennium, from the Accad period (middle of third millennium) and especially from the Hurrian settlement of the fifteenth century B.C. The finds include intact burials, pottery (much of it painted), stamp and cylinder seals, plaques, figurines, various cult and household objects, painted glass, and mural paintings. Among the objects of special interest are an Accadian map (pl. 55) and the clay tablet with the history-making seal impression of "Saushattar son of Parsashatar, king of Maitan = Mitanni." Mr. Starr has reserved the bulk of the numerous Hurrian

seals and seal impressions for a separate study.

R. H. Pfeiffer and E. A. Speiser have published *One Hundred New Selected Nuzi Texts* (*Annual of the American Schools of Oriental Research,* Vol. XVI). Pfeiffer has transliterated the tablets while Speiser has translated and annotated them. Of particular interest are the court documents (texts 1–14) recording the suit brought against the mayor, Kushiharbe, by the people of Nuzi on charges of corruption such as bribery, misappropriation of government property and revenues, immoral behavior and association with a gang of kidnappers and terrorists.

A contribution to a more precise understanding of the language of these tablets is *The Nuzi Dialect of Akkadian* (*Language Dissertations,* no. 23) by M. Berkooz. This doctoral thesis of 64 pages describes the orthography and phonology of the dialect.

Movable Property in the Nuzi Documents (*American Oriental Series,* No. 10), the doctoral dissertation of Dorothy Cross, is a study of the weights and measures, domestic animals, produce, metals, garments, implements and building materials in these tablets. It is a welcome contribution to the economics of a uniquely well-documented ancient community. Some of the interesting results are summed up on p. 62: the values of oxen, asses and sheep are given in terms of silver; a shekel of silver was worth, on the average, 216 shekels of lead.

Two commendable volumes of autographed cuneiform tablets appeared in 1937. *Votive and Historical Texts from Babylonia and Assyria* (*Yale Oriental Series. Babylonian Texts,* Vol. IX) by F. J. Stephens contains 35 plates of handsomely copied texts and 11 plates of photographs prefaced with 45 pages of description and indices. The texts range from about 3000 to the sixth century B.C. Special attention may be called to No. 31, which reveals the name of king Rim-Sin's wife, Rim-Sin-Shala-Bashtashu, and their daughter, Lirish-Gamlum; to No. 62, an inscription of Nidnusha, an otherwise unknown ruler of Der, Babylonia, from around the twentieth century B.C.; and to Nos. 66 and 67, which are votive inscriptions of an otherwise unknown Hashmargalshu. G. G. Hackman's *Temple Documents of the Third Dyansty of Ur from Umma* (= *Babylonian Inscriptions in the Collection of James B. Nes, Yale University,* Vol. V) consists of the autographed copies of 346 texts presented on 74 plates, preceded by 34 pages of introduction and indices. The texts are dated in the reigns of Shulgi, Bur-Sin, Shu-Sin and a few in the reign of Ibi-Sin, the last of the dynasty (last third of third millennium). None date from Zur-Nammu, the founder of the dynasty. The tablets deal, for the most part, with cult, temple donations and administration, slavery, receipts for goods, accounts, inventories and contracts. This publication adds to our growing knowledge of Sumerian life and organization.

ASIA MINOR

Researches in Anatolia, Vol. VII (*Oriental Institute Publications,* No. XXVIII) . *The Alishar Huyuk, Season of 1930–32,* Part I, by H. H. von der Osten.

SYRIA-PALESTINE

In the Hebrew Bible the reader is often directed to pronounce a word other than according to the consonantal text. When such discrepancies arise, the word as written in the consonantal text is called "Ktib," while the pronunciation prescribed is termed "Qre." R. Gordis has made a study of Ktib and Qre in a 219-page doctoral dissertation entitled *The Biblical Text in the Making* (Jewish Publication Society). The material assembled is quite useful.

In his *Commentary on Deuteronomy* (*Jewish Publication Society,* pp. xliv, 355 with 3 maps) J. Reider clearly states that he rejects virtually all the conclusions of modern, critical scholarship and upholds essentially the traditional Jewish viewpoint. He therefore adheres to the Mosaic authorship of the Pentateuch. Readers of the Bible may use Reider's translation and copious footnotes to advantage.

The outstanding contribution of the year to the study of ancient Palestine is G. E. Wright's doctoral thesis, "The Pottery of Palestine from the Earliest Times to the End of the Early Bronze Age" (American Schools of Oriental Research. *Archaeology,* No. 1; pp. ix, 106 with 6 plates). Pottery, especially in Palestine, is the most important archaeological criterion for chronology. Wright discusses the succession of ceramic types from Neolithic times (sixth and fifth millennia) to the close of Early Bronze IV (23rd and 22nd centuries). The study is up-to-date, critical and thoroughly reliable within the limitations of the evidence available.

A Social and Religious History of the Jews (in 3 vols.; Columbia University Press) by Salo Baron is a well-written, mature study from the pen of a leading Jewish historian. It starts with the remote origins of the Hebrews and comes down to the Jews of today with some observations on their prospects. Vol. III consists of notes, a bibliography and an index. The notes are heartily recommended to the reader.

ARABIA, ISLAM

P. K. Hitti's *History of the Arabs* (pp. xvii, 767; Macmillan) will doubtless remain for many years a standard work on the Arabs from pre-Islamic times to the Ottoman conquest in the early sixteenth century A.D. Hitti's first-hand knowledge of Arabic sources gives this volume unusual merit.

EGYPT

G. A. Reisner has produced a monumental work, *The Development of the Egyptian Tomb down to the Accession of Cheops* (428 pp. with numerous illustrations; Harvard University Press). The evolution of graves in Egypt is traced from predynastic days up to the Pyramid Age. The tomb had a twofold aim: to provide a place for burying and another for offering to the dead. The substructure of the tomb is for the burial; the superstructure, for offerings. Reisner describes the evolution of both structures with exhaustive, scholarly precision combined with a lucidness that makes the book as intelligible to the layman as it is indispensable to the specialist. This volume is a study of the progress that led up to the construction of the most enduring of the Seven Wonders of antiquity.

The Oriental Institute of the University of Chicago published the following during 1937: *The Mastaba of Mereruka,* Parts I and II (*Oriental Institute Publications,* Nos. XXXI, XXXIX), by the Sakkarah Expedition; *Medinet Habu Graffiti.* Facsimiles (*Oriental Institute Publications,* No. XXXVI), edited by Wm. F. Edgerton; *The Monasteries of the Fayyum* (*Studies in Ancient Oriental Civilization,* No. 16), by N. Abbott.

PUBLICATIONS

For the latest results of scholarly research the reader is referred to the following quarterlies: *American Journal of Semitic Languages and Literatures, Journal of the American Oriental Society, Bulletin of the American Schools of Oriental Research, Journal of the Society of Biblical Literature,* and *Jewish Quarterly Review.*

INDO-EUROPEAN LINGUISTICS

By George S. Lane

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LINGUISTIC SOCIETY OF AMERICA

Again the work of the Linguistic Society of America (LSA)* is of moment. The executive committee took steps to organize two sub-groups for scholars of more specialized interest, a Group for Phonemics (Chairman E. Sapir) and a Group for American Indian Languages (Chairman F. Boaz). The Society records the loss of two of its members. Mrs. Eva Fiesel, Visiting Professor of Linguistics at Bryn Mawr College, died May 27, 1937. This blow to Etruscan studies is serious (cf. The American Year Book, 1936, p. 820). S. E. Bassett, professor of Greek at the University of Vermont, died Dec. 21, 1936. The Society lost in Professor Bassett one of its most faithful adherents. The thirteenth annual meeting of the LSA at Chicago, Dec. 28–9, 1936, was held in conjunction with the American Philological Association and the Archeological Institute of America. Outstanding among the papers for its possible import on future Tocharian studies was that of E. Sapir "Tibetan and Tocharian" (cf. Tocharian, below). It was decided to hold the 1937 meeting in conjunction with the Modern Language Association of America, likewise at Chicago.

The Linguistic Institute directed by Professor Fries was held again this year at Ann Arbor under the joint auspices of the LSA and the University of Michigan summer session, June 28–Aug. 20. As previously, the Institute drew upon the faculty of the University of Michigan with the support of scholars invited from other institutions. In addition to regular courses, there were, as before, the special afternoon and evening lectures and luncheon conferences. Among the men brought from the outside, Professors Bolling (Ohio), Sturtevant (Yale), Kent (Pennsylvania), von Wartburg (Leipzig), Edgerton (Yale), Bloomfield (Chicago), Kurath (Brown), Keniston (Chicago), and Sapir (Yale), were conspicuous.

GENERAL CONTRIBUTIONS

Language Monograph No. 17 which appeared this year was W. F. Collinson's "Indication, a Study in Demonstratives, Articles and other 'Indicaters.'" This is the third in a series of studies on the *Foundations of Language* published with the support of the International Auxiliary Language Association under the editorship of Mrs. A. V. Morris. Two important articles in general linguistics are E. H. Sturtevant, "Analogical Creation and Contamination as Illustrated by Lapses" (*JAOS* 57:135–150) and R. G. Kent, "Assimilation and Dissimilation" (*Lang.* 12:245–58). Professor Sturtevant attempts to distinguish assimilation and contamination from true analogical creation, while Professor Kent is interested in the conditions and causes of assimilation and dissimilation. Of general interest also, but restricted in scope as to data, is R. J. Menner's article "The Conflict of Homonyms in English" (*Lang.* 12:229–44). There is more of the phoneme in M. Swadesh's "Interpretation of Long Consonants" (*Lang.* 13:1–17). More definitely for the Indo-Europeanist, A. L. Kroeber and C. D. Crétien again employ the method of differential diagnosis by quantitative correlation to the IE languages in "Quantitative Classification of the Indo-European Languages" (*Lang.* 13:83–103). J. W. Poultney attempts to determine the original aspectal significance of the nasal infix (with particular reference to the

* Other abbreviations are: *AJArch.* = *American Journal of Archaeology, AJPh.* = *American Journal of Philology, BSOS* = *Bulletin of the School of Oriental Studies, JAOS* = *Journal of the American Oriental Society, JEGPh.* = *Journal of English and Germanic Philology, Lang.* = *Language, Journal of the Linguistic Society of America, MLN* = *Modern Language Notes, PMLA* = *Publications of the Modern Language Association, TAPA* = *Transactions of the American Philological Association.*

views of Delbrück) in "The Distribution of the Nasal-Infixing Presents" (*Lang.* 13:163–76).

INDO-IRANIAN

Professor Edgerton continued his studies of Buddhistic Sanskrit in two articles, "The Aorist in Buddhist Hybrid Sanskrit" (*JAOS* 37:16–34) and "Gerunds in Buddhist Hybrid Sanskrit" (*Lang.* 13:107–122). See also the same author's "The Prakrit Underlying Buddhistic Hybrid Sanskrit," (*BSOS* 8:501–16). W. H. Austin and H. L. Smith gave a lexicographical note on "Sanskrit *parśu* and *parāśu*" (*JAOS* 57:16–34) in which they attempted to distinguish between these commonly confused forms. R. A. Hall (*Lang.* 12:297–9) tried to supply the "Etymology of O(ld) P(ersian) *vardanam*" and its cognates in Avestan and Sanskrit.

HITTITE

George Bechtel's dissertation (Yale) *Hittite Verbs in -sk-, a Study in Verbal Aspect* (Ann Arbor, 1936) appeared too late to be included in the 1936 report. W. Petersen continued his comparative studies with "Hittite Demonstrative Pronouns" (*AJPH.* 58:306–19), an analysis of the various pronominal stems in Hittite. Other studies were those by W. M. Austin and H. L. Smith, "The Etymology of Hittite *yukas*" (*Lang.* 13:104–6) and E. Sapir, "Hebrew 'helmet,' a Loanword, and its Bearing on Indo-European Phonology" (*JAOS* 57:73–7). The title belies the content and possible import of the article. Professor Sapir makes use of the Semitic loanwords from Hittite *kūpsaḫi-* as further argument for the existence of velar spirants in Primitive IE.

TOCHARIAN

Of particular moment is certainly E. Sapir's discussion "Tibetan Influence on Tocharian" (*Lang.* 12:259–71) supplemented by his paper at the Chicago meeting "Tibetan and Tocharian." Professor Sapir holds that many of the striking contrasts between Tocharian and other Indo-European idioms is due to the fact that Tocharian is a strongly Tibetanized dialect.

GREEK

The important event of the ye was a new issue of C. D. Buck *Comparative Grammar of Greek ar Latin* (first issue Chicago, 1933). is gratifying that the demand shou be sufficient to make a corrected r printing of this indispensable wo possible in so short a time. Two mo articles on Greek word-formation b W. Petersen appeared—"The Gree Masculines in Circumflexed -ᾶς (*Cl.Ph.* 32:121–30) and "Greek Pla Names in -(ε)ών, gen. -(ε)ώνο (*Cl.Ph.* 32.305–28). Both are ou growths, no doubt, of the tremendo "Greek Suffix Project" carried o jointly at Chicago by Professors Buc and Petersen.

ITALIC

The re-issue of Buck's *Comparati Grammar* should also be noted her Lexicographical notes were N. W De Witt, "Semantic Notes to o *optimus, optimates*" (*Lang.* 13:70–; and D. Paschall, "The Origin an Semantic Development of Lat *Vitium*" (*TAPA* 67:219–31). Profess Whatmough's excellent edition of t Messapic Inscriptions (*Prae-Ital Dialects of Italy* 2) bore fruit aga in R. Moore Bechtel's discussion "The Messapic *Klaohizis* Formula (*Lang.* 13:177–85). Not primarily i tended perhaps for the consumptio of Indo-Europeanists is Profess Whatmough's own contribution *"Tus Origo Raetis"* (*Harvard Studies Cl.Ph.* 48:181–202), but certainly primary interest to them because the linguistic importance of definite laying this ghost of Livy's.

GERMANIC*

The Germanicists have been acti this year. General Germanic we the problems dealt with in J. A. Kern *"ē* and *eu* in Germanic Strong Pre erites of Class VII" (*Lang.* 13:11–17 where the old question of the identi of the West and North Germanic cla seven with the Gothic reduplicati class is revived. C. E. Bazell attac the "Auslautsgesetze" again in "I

* Cf. also the reports in the *American Ye Book* on English and Germanic Languag and Literatures.

Final unaccented *ē* in Germanic" (*JEGPh.* 36:1–9). M. H. Roberts, "The Antiquity of the Germanic Verb-adverb Locution" (*JEGPh.* 35:461–81) traced the development from IE times to modern English. G. Nordmeyer, "Lautverschiebungserklärungen" (*JEGPh.* 35:482–95), after a survey of the history of the problem, leaned toward a unified explanation of both the first and second mutation on the basis of drift. For Gothic A. M. Sturtevant furnishes two studies, "Gothic Semantic Notes" (*JEGPh.* 36:176–82), and "Gothic Notes" (*MLN* 52:207–9). The latter are chiefly syntactical on *-u-hwa, hwazuh,* and *bis-*. E. Roedder, "Gothic *gasaihwan*" (*PMLA* 52:613–24) answered Professor Porterfield's article "Perceptual Sense in Gothic" (*JEGPh.* 33:205ff.) and, besides disposing of most of the latter's theories concerning Ulfila's persistent use of *(ga)saihwan,* furnished a valuable semantic study on verbs of seeing in older Germanic. R. J. Menner in "Crimean Gothic *Cadarion* (*Cadariou*), Latin *Centurio,* Grk. *κεντυρίων*" (*JEGPh.* 36:168–175) suggested Latino-Greek origin for Busbecq's word for *miles.* G. T. Flom, "Breaking in Old Norse and Old English" (*Lang.* 13:123–36), gave a minute comparison of the phenomena in the two branches of Germanic, with a valuable bibliography chronologically arranged. This was the printed form of Professor Flom's paper read at the meeting of LSA in Chicago. For English linguistics, H. C. Wyld continued his "Studies in the Diction of Layamon's Brut" (*Lang.* 13:29–59, 194–237), S. Einarsson published some "Old and Middle English Notes" (*JEGPh.* 36:183–7), and F. P. Magoun discussed what is meant by "Colloquial Old and Middle English" (*Harvard Studies and Notes in Phil. and Lit.* 19:167–73). For German, note the belated publication of A. L. McCobb's dissertation "The Double Preterit Forms *gie-gienc, lie-liez, vie-vienc* in Middle High German" (*Hesperia* No. 11, Göttingen, 1936). This is McCobb's (died 1921) Johns Hopkins dissertation (1917).

BALTIC AND CELTIC

A. Senn furnishes a detailed lexicographic study of "Lithuanian *dỹkas* and Related Words" in the *Mélanges Linguistiques Offerts à M. Holger Pedersen* (1937). In the Celtic, cf. G. S. Lane, "Celtic Notes" (*Lang.* 13:21–8).

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

AMERICAN ACADEMY OF ARTS AND LETTERS, 633 W. 155th St., New York City.

AMERICAN ACADEMY OF ARTS AND SCIENCES, 28 Newbury St., Boston, Mass.

AMERICAN BOOKSELLERS, ASSN., 35 E. 20th Street, New York City.

AMERICAN COUNCIL OF LEARNED SOCIETIES, 907 Fifteenth St., N.W., Washington, D.C.

AMERICAN LIBRARY ASSN., 520 N. Michigan Ave., Chicago, Ill.

AMERICAN NEWSPAPER PUBLISHERS' ASSN., 370 Lexington Ave., New York City.

AMERICAN PHILOSOPHICAL SOCIETY, 104 S. Fifth St., Philadelphia, Pa.

AMERICAN SOCIETY OF COMPOSERS, AUTHORS AND PUBLISHERS, 30 Rockefeller Plaza, New York City.

AMERICAN SOCIETY OF NEWSPAPER EDITORS, Gannett Newspapers, Rochester, N.Y.

ASSOCIATED PRESS, 383 Madison Ave., New York City.

ASSOCIATION OF NATIONAL ADVERTISERS, 330 W. 42nd Street, New York City.

BIBLIOGRAPHICAL SOCIETY OF AMERICA, Grosvenor Library, Buffalo, N.Y.

FOREIGN PRESS PUBLICITY SERVICE, 258 Fifth Ave., New York City.

GERMAN CLUB, 5 E. 66th St., New York City.

NATIONAL ASSN. OF BOOK PUBLISHERS, 347 Fifth Ave., New York City.

NATIONAL EDITORIAL ASSN., 134 N. La Salle St., Chicago, Ill.

NATIONAL INSTITUTE OF ARTS AND LETTERS, 633 W. 155th St., New York City.

NATIONAL PUBLISHERS' ASSN., 232 Madison Ave., New York City.

NEWSPAPER ADVERTISING EXECUTIVES ASSN., 1708 Mariner Tower, Milwaukee, Wis.

PEOPLES INSTITUTE, 70 Fifth Ave., New York City.

UNITED PRESS ASSN., 220 E. 42nd Street, New York City.

U. S. PUBLISHERS ASSN., INC., 386 Fourth Ave., New York City.

AMERICAN LITERATURE

AMERICAN DIALECT SOCIETY, Bascom Hall, Madison, Wis.

AUTHORS GUILD, 9 E. 38th Street, New York City.

AUTHORS LEAGUE OF AMERICA, INC., 9 E. 38th Street, New York City.

CATHOLIC WRITERS GUILD OF AMERICA, 128 W. 71st St., New York City.

NATIONAL ASSN. FOR AMERICAN SPEECH, 174 W. 76th Street, New York City.

SIMPLIFIED SPELLING BOARD, Lake Placid Club, Essex County, N.Y.

LANGUAGE AND LITERATURE

AMERICAN CLASSICAL LEAGUE, New York University, Washington Square, New York City.

AMERICAN ORIENTAL SOCIETY, Trinity College, Hartford, Conn.

AMERICAN PHILOLOGICAL ASSN., State University of Iowa, Iowa City, Ia.

DANTE ALIGHIERI SOCIETY OF NEW YORK., 626 Fifth Ave., New York City.

DICKENS FELLOWSHIP OF NEW YORK, 102 East 52nd St., New York City.

MODERN LANGUAGE ASSN. OF AMERICA, 100 Washington Square E., New York City.

DIVISION XXVI

THE ARTS

ARCHAEOLOGY

By Ralph V. D. Magoffin

Professor, New York University

UNITED STATES

New Mexico.—*Casa Rinconada* is the largest *kiva* thus far excavated. It was used as the religious center for the main group of the Chaco pueblos. It is 64 feet in diameter and discloses unique features in underground passages with openings through which the performers in the religious ceremonies could appear magically as if from the underworld. It has been completely restored by Gordon Vivian of the American School of American Research at Santa Fe.

Jemez Cave.—H. G. Alexander and Paul Reiter have shown, from the finds in different levels, the diffusion from the San Juan Basket Maker center toward the Southern Basket Maker sites; and also from the potsherds of 1250–1300 have established contacts with Late Pueblo III. All finds seem to antedate the nearby community houses.

Chaco Canyon.—Restorations of Pueblo, Tsin Kletzin, and Chetro Ketl —all by R. M. Coffin—have given a clear understanding of these three large and famous community houses.

GUATEMALA

The Carnegie Institution of Washington has discovered new facts on the chronology of the Old Mayan Empire in the tombs of early American rulers found in a group of Mayan pyramids in the highlands of Guatemala.

AGE OF MAN

H. de Terra of Yale estimates from recent discoveries, such as the fossil ape of Sterkfontein of South Africa and from the inhabitants of the Choukoutien caves in China, that the human race became definitely human between the Pliocene and the Pleistocene Ages, about 1,000,000 years ago.

ASIA MINOR

Troy.—Extensive operations on the hill of Hissarlik by the expedition of the University of Cincinnati, conducted by W. T. Semple and Carl Blegen, and reported by the latter, seem to have confirmed the growing suspicion that it was the VII, not the VI, stratum (from the bottom), that holds the remains of the City of Priam. Doerpfeld still maintains that Troy VI, rather than Blegen's Troy VIIa, is the ancient city of the Trojan War. He calls Troy VIIa the city of Aeneas.

EGYPT

Sakkara.—Forty-two unplundered storage chambers were found in the tomb of the Vizier Hemaka of Dynasty I, dating earlier than 3000 B.C.

Thebes.—During the excavation of the Avenue of Sphinxes a cemetery was found that dates about 3000 B.C. Most of the graves had not been robbed. Among the many small finds, one of interest was that of two sets of ivory draughtsmen, seven in each set. The Metropolitan Museum of Art Expedition (1935–36) carried on a splendid piece of work in the hill Sheikh Abd el Kurneh below the tomb prepared for Senmut, steward

of Queen Hatshepsut. They found the tomb of Senmut's parents, Ra'mose and Hatnufer. In the same necropolis was found the mummy of a horse, wrapped, and interred in its own coffin during Dynasty XVIII. It is the earliest horse ever found in Egypt. This find should be remembered in connection with the skeleton of the earliest horse of the Hyksos, found several years ago at Gaza in Palestine (Metropolitan Museum of Art *Bulletin,* Jan, 1937, Sec. II). At Tud, south of Thebes, the French Institute of Cairo found a cache of four chests containing ingots of previous metals, and a quantity of rich art objects of foreign origin, which date in the second half of the XX century B.C. The date of the objects was established by the name of Pharaoh Amenemhet II that was found on the lids of two of the chests.

ATHENS

Agora.—Work in the Agora under the direction of Leslie Shear was very fruitful again in 1937. Six new buildings were located and more than half uncovered. Shear's remaking of the topographical ground plan every year as his new discoveries allow, will be materially aided by the location and identification of these new structures. A building has also been found northwest of the Odeion, south of the Altar of the Twelve Gods. It is presumably the temple of Ares, since Pausanias (I,8,5) locates this temple near the statues of the Tyrannicides which are now known to have stood opposite the Metroön. With the topographical successes which at the moment bulk very large in Shear's judgment, there have been discovered hundreds of things, of which there is space here to tell of but a few. An ivory statuette, 30 cm. high, of Apollo Lykeios has already won this encomium from an expert: "It is a triumph of classical technique wrought by a master hand." A base of Pentelic marble for the statues of Demeter and Kore reveals on it the signature of the sculptor Praxiteles. A base of Hymettian marble with the cuttings on top for the feet of a bronze statue shares interest with the base just mentioned. This base bears an inscribed dedication honoring Julia Augusta Boulaia, the mother of Tiberius Augustus. It gives us the title of Livia, wife of Augustus, which she assumed in 14 A.D. at the death of that great emperor of Rome. The complete title shows that the Athenians had honored her with a bronze statue and had associated her with Athena Boulaia, whose statue stood in the Bouleuterion. Several more ancient wells were found and cleared. In them were a number of new curse tablets of lead, more than 100 lead seals, and scores of inscriptions. Also, among the many finds in other parts of the Agora were many pieces of pottery, several pieces of excellent statuary, terra cotta figurines and moulds for them, and a considerable number of lamps, some of which had on the bottoms the signatures of their makers.

Acropolis.—Gorham P. Stevens, former director of the American Academy in Rome, has made a detailed drawing entitled "The Periclean Entrance Court of the Acropolis of Athens," which is certain to be the "last word" for a long time on that entrance. Mr. Stevens shows from his study of the cuttings on the rocks, from the descriptions of Pausanias, etc. accompanying the drawing, that the entrance court was reached from the Propylaea on the west, and that the religious procession did not go straight east from the Propylaea to the Parthenon, but went southward into a court between the Parthenon and the Brauronion, and then up the rock cut steps below the west façade of the temple. There the procession divided and proceeded as is shown in the Panathenaic frieze. This is a truly amazing discovery that will probably settle the question of the direction of the figures in the frieze. Below a mass of inscriptions, broken statuettes and pottery were found an ostrakon of Kimon, son of Miltiades, and also 192 ostraka, mostly on the feet of cylices, of Themistocles; this latter find causing Mrs. Carl Blegen to point to them as proofs of an organized propaganda against that great statesman.

Recent work has made possible the topographical delineation of the roads and pathways which led to the Acropolis from the south. The most important is "Promenade Street" which ran round the Odeion of Herodes Atticus. Two roads joined this one, all terminating on the square above the Odeion, whence one road made a winding ascent to the Propylaeum of the Acropolis.

Inscriptions.—Four inscriptions of great importance have been found, two of which merit notice: (1) an honorary decree on part of a stela of Pentelic marble of the V century B.C., which has formulaic variations of great importance; (2) the beginning of a decree of the Synedrion of the Allies in the Second Athenian Confederation, the first decree of its knd ever to be found. The German Archaeological Institute has announced that the Greek Government would provide money for a six-year campaign of excavation at Olympia; and further that Gustav Oberlaender (lately deceased) of Reading, Penn. had given funds to build a museum to house the finds from the excavation of the Kerameikos. In the Kerameikos excavations the discovery of burial offerings in chronological sequences of graves has established significant periods: (1) Sub-Mycenaean to the end of the Geometric; (2) from the VII century to the early Attic; (3) the second part of the V century. The Protogeometric burials were all inhumations. The pottery in the latest graves lead directly over to those of the Early Geometric. Perhaps the best find was that of a bronze cauldron (*dinos*) with tongue, egg and dart, and guilloche decoration. It was found in a sarcophagus of shell limestone. The ashes of the dead were wrapped in a woven cloth decorated with purple rectangles. Two unguent boxes of alabaster lay near the bronze cauldron. The grave of the granddaughter of Alcibiades, Hipparete, is recognized in an inhumation burial found near the foundation of her trapeza (grave table). At the feet of her skeleton were two "tear bottles" and a spindle whorl of stone. Her left breast was decorated with a rosette in stucco which bears many traces of red, blue, and gold color.

OTHER AREAS IN GREECE

Corinth.—The level of the Roman Agora has been uncovered from beneath a Byzantine road. Also in a Byzantine tomb some bronze jewelry was found and near by an interesting potter's kiln. Important has been the discovery and excavation of the Senate House. A disk from a broken sphinx of the VI century, found in a drain belonging to the Byzantine wall, seems to prove that the figure was taboo to the Byzantines. An Attic bell krater of about 380 B.C. has in paint on one of its sides the arrival of Theseus in Attica. He is shown seated behind the altar of Zeus Meilichios waiting to be purified of blood-guilt. Perithoös and Phorbas stand at one side facing Athena. The scene illustrates a passage in Bacchylides (XVII, 45 ff.), thus furnishing another instance of the importance of archaeological finds for the interpretation of Greek literature. West of the Senate House five more shops have been cleared. A well preserved marble head of Serapis of the II century A.D. was found. It bore many traces of the original gold leaf with which it had been covered. During the demolition of the Church of St. John the Theologian many pieces of the earlier church were discovered. In the foundation was also discovered several pieces of Greek sculpture of Pergamenian type. In one of the many graves was the skeleton of a man over whose left shoulder was a skyphos of Geometric date and by whose side was a wooden handled knife of iron. From another grave came the skeleton of a young woman who had on her left shoulder the bones of an infant and in whose right hand was a wooden handled iron knife.

Eleusis.—Kourouniotis excavated a Roman villa below the modern museum. On the floors of the rooms and the court were well preserved mosaics as fine as any ever discovered. One of a geometrical pattern is particularly fine.

Marathon.—A bee hive tomb has been found near the site of the famous

battle. The burials were both inhumation and cremation. A beautiful gold cup was the best find.

Sicyon.—The excavation of the Gymnasium seems to point to the building mentioned by Pausanias. If the identification is correct, it will make possible the identification of other buildings mentioned by the historian, and thus serve as the newly found buildings in the Agora at Athens are serving Shear.

Samos.—The discovery of a tremendous number of early pottery vessels at the Heraeum has made it possible to draw up the first detailed study of geometric ceramic ware.

Crete.—The cave of Amnisos contains a sanctuary built on an earlier Minoan structure. Pottery finds show that the sanctuary was in use from the Protogeometric period to Roman times. Many objects of Egyptian faïence seem to indicate close trade relations with Egypt.

The Phaistos Disk.—This puzzling inscription has risen again into prominence. Guth, from his late work, seems to have established that: (1) the disk is of the XVII century B.C.; (2) the inscription is to be read from the margin inwards, not from the center outwards; (3) the panels contain words; (4) the script is not alphabetic but syllabic; (5) the elements in the disk suggest relation to the cult of a Sun God, and not to the Anatolian mother goddess. It is interesting, if not important, that the ideographic symbols bear much resemblance to those determined by Sylvanus Morley of the Carnegie Institution of Washington for the Mayan stele.

Inscriptions.—A great number of inscriptions, important for nearly every field of Greek study, have been found during the year. One, now in the museum at Saloniki, is the graven form of a letter written by King Philip V of Macedonia in 181 B.C. to his representative Archippos approving the request of the tetrarch Nikanor for an area in which to conduct worship. Proof seems also to be had from the inscription of the existence of a "royal year" in Macedonia.

INDIA

Sari-Dheri.—Another site in the Indus Valley has been added to those of Harappa and Mohenjo-daro, so well known from the excavations of Sir John Marshall. The mound of Sari-Dheri is in Peshawar. The finds of pottery, jar covers, spindle whorls and figurines, dating back to 3000 B.C., have helped to confirm the connections between the Indus, Anau and the Aegean.

IRAQ

Tepe Gawra.—E. A. Speiser of the University of Pennsylvania has continued his dig through level XIII, and has found in the ruins dating 4000 B.C. a round temple like those constructed in Biblical cities, 3000 years later. The acropolis buildings of Tepe Gawra XIII are the earliest examples of monumental architecture. The polychrome pots and bowls which belong to the so-called Tell Halaf period (one level below that of the el-Obeid type), intricate in design and varied in pattern, are giving enlarged borders to the early excellence of pottery. It will be remembered that the el-Obeid culture begins with level XIII, and that the Halaf below it will run as many as ten more building levels.

Babylonia.—The terra cotta winged statuette, whose bird-claw feet stands on two lions, whose horned tiara and the symbols in her hands, all resemble certain rock sculptures of the Babylonian goddess Ishtar, turns out now to be a representation of Lilith (*cf.* Isaiah 34:14), the third now known of the evil demons of Sumeria, the fever god Lamashtu and the wind demon Pazuzu being the two others.

Mari.—The work on the temple of Ishtar and on the Royal Palace at Mari, is nearly completed. Four building periods were found: the latest belongs to the Third Dynasty of Ur, and was destroyed by Hammurabi; the next period below is that of the third pre-Sargonid time, and was destroyed about 2850 B.C.; next below is that dated 3000 B.C.; the lowest is not yet completely cleared. One fresco, still *in situ*, shows the goddess Ishtar giving the rod of office to the king. Of cuneiform tablets

there were found over 15,000, many of which belong to the diplomatic archives of the last king of Mari, Zimri-Lim, whose reign seems to have ended with the victory over him by Hammurabi.

ITALY

Rome.—The government work at Ostia, Herculaneum, Pompeii, as well as the operation which have brought New Rome into being for the commemoration this year of the 2000th anniversary of the birth of the Emperor Augustus, have brought to light an enormous number of ancient structures and artifacts. In excavating for two office buildings near the Tiber, there was found an entire city quarter of imperial times with its streets, storehouses, and tenements. Here was found a fine marble portrait head of Augustus. Near the ancient Via Flaminia a hoard of ancient coins was lately found. The Augustan *aureus*, four legionary *denarii* of Antony, two Othonian, and one of Domitilla, are very rare.

Ostia.—Director Calza has proceeded with his work. The cemetery area of the Via Laurentina has been systematized, and near the coast line Calza has found the best preserved of Ostia's buildings, and a wealth of frescoes, mosaics, and painted inscriptions, all of which will soon be published.

Pompeii.—M. Della Corte has uncovered near the amphitheatre a space now called the "Palaestra," and on the stucco has found a complete copy of the famous rebus *ROTAS-SATOR*. There seems to be contemporary evidence that this was a Christian anagram; if this is correct, it would prove the presence of Christians at Pompeii in 79 A.D.

Calabria and Apulia.—A new state museum at Reggio now houses the movable discoveries made by Paolo Orsi who died in 1935. Finds of great importance from Locri, Croton, Cosenza, Matera, and Lecce are rich in material for amplifying the history of south Italy.

Etruria.—More Etruscan tombs to the number of 21 have been excavated near Veii. They comprise six chamber tombs, seven trench graves, and eight corridor tombs. Both inhumation and cremation burials are represented. Their importance is chronological, as they date from the VII to the III centuries B.C.

Ravenna.—The city gate known as the Porta Aurea was destroyed in 1582. Many remains of it have been preserved in the museum of San Vitale. On a piece lately found is an inscription that shows the date 43 A.D. thus making the reconstructed Porta Aurea an important link in the double purpose of a triumphal arch and a defensive city gate, between the Augustan constructions and the Arch of Titus of 82 A.D.

Aosta.—The Roman theatre has been almost completely excavated, and the remains of several mechanical devices to be associated with the performances have been found.

PALESTINE AND NEIGHBORING AREAS

Transjordania. — Director N. Glueck of the American School of Oriental Research in Jerusalem, with the help of the British Air Force which did the work as part of the regular training schedule of the 14th Bombing Squadron stationed at Amman (ancient Philadelphia), has made several aerial surveys of south Transjordania. As a result more than 600 datable ancient sites have been examined and mapped.

Khirbet et-Tannur. — Director Glueck has excavated a complete Nabataean temple complex. It lies on a fairly high site between the Dead Sea and the Arabian desert. The deities worshipped there are seen to have been numerous, and the chief ones were Hadad and Atargatis. The temple dates in the I century A.D. Much will now be cleared up in regard to the appearance here in Transjordania of so many Syrian gods, whose provenience has hitherto been confined to Heliopolis-Baalbek, Palmyra, Dura-Europos, and Askalon.

Ras el 'Ain.—A reservoir for the Jerusalem water supply was excavated here. Quantities were found of

Early and Middle Bronze ware and of pottery similar to that from levels G–F at Tell Beit Mirsim. Albright dates the site as XIX and XVIII centuries B.C.

Jericho.—Garstang claims that Jericho is the oldest known civilized settlement in the world. He arrived at his conclusions by going down through a number of prehistoric levels, finding plastic images, painted hand-made pottery, and plastered houses, and by comparative methods dated the strata between 6000 and 7000 B.C. Garstang and Rowe after six years work at Jericho, say definitely that the city fell about 1400 B.C. during the reign of the Egyptian Pharoah Amenophis III. Several scarabs of that ruler date the Fall of Jericho, which therefore would have been before the accession of Akhenaten.

Lachish (Tell Duweir).—J. L. Starkey has done some splendid work here these past several years. In two XIV century rock-cut tombs he found the remains of a man's burial. In one chamber are the remains of 1500 bodies; in the other of more than 500 bodies. Seven hundred of the skulls are sufficiently well preserved to use in anatomical study; three of these have been trephined. Starkey's claim that these skeletons are of the men who were slain during Sennacherib's siege of Lachish about 700 B.C., is pretty well established.

Jewish Shekels.—Those shekels that have a chalice on the obverse and a three-flowered stem on the reverse are now to be dated by means of a new hoard lately discovered northeast of Megiddo in Palestine. Sixty-four are Jewish shekels of the year 3. Coins of the Second Revolt were known and tabulated. The First Revolt broke out in 65–66 A.D. Therefore these newly found coins of the year 3 date 68–69 A.D., at the time Vespasian and Titus were besieging Jerusalem.

Bethlehem.—A new survey of the Church of the Nativity shows that restorations were made of the original Constantinian building. Père Vincent has proved that the mosaics are post-Constantinian. That church was evidently burned during the Samarian insurrection at the end of the V century A.D.; then restored by Justinian after 529, and then radically remodelled to meet the new liturgical demands.

IRAN PERSIA

Persepolis.—The Oriental Institute of the University of Chicago has found a tablet which for the first time lists the lands conquered by Xerxes. Two new sets of wall reliefs on the terrace portray audience scenes. Each has nine figures. King Darius is shown seated on his throne, and behind him stands his successor Xerxes.

SYRIA

Ras Shamra (Ugarit).—A new quarter of the city has been uncovered which dates XIV–XII centuries B.C. Many artistic objects and written documents were found in the larger houses. Very important is the stela on which is represented the king of Ugarit making an offering to the supreme god *El* (=Palestinian Jahveh). Among the Babylonian cuneiform tablets were wills, contracts for the sale of real estate, and a declaration on the liberation and marriage of a female slave.

TURKEY

Istanbul.—Hagia Sophia was transformed two years ago into a Byzantine museum of Art. The German Archaeological School obtained permission to excavate in the western forecourt. Ancient masonry and architectural pieces were found under the floor. These are remains of one of the forerunners of Hagia Sophia. Constantine did not live to see his basilica finished; he inaugurated it in 360 A.D. Theodosius II rebuilt it; then it was burned in 532; Justinian began the third Basilica, which is the one that still stands.

MUSEUMS

Metropolitan Museum of Art.—New accessions include: an Etruscan bronze colander and funnel with the hinges of the squeezer still in working order; a unique headdress,

Egyptian of the XVIII Dynasty, has been put together finally from 819 pieces of gold which hitherto have nonplussed the attempts at restoration.

Worcester (Mass.) Art Museum.—The museum has just acquired a funeral stela in Pentelic marble of the V century B.C. This Attic sculpture was found near Megara; was brought, over 100 years ago, to Aberdeenshire by Thomas Gordon, who served with Lord Byron in the Greek War of Independence. This magnificent marble of Parthenonian nobility will now remain in an American museum.

Egyption Museum at Cairo.—The late King Fuad presented the museum with his fine collection of scarabs.

Walters Art Gallery (Baltimore).—Since Dorothy K. Hill became Curator of the Classical Collection she has brought to light from the crowded basement groups of small bronze statues illustrating classical antiquity: five Egyptian prehistoric figurines; a group of late dynastic statues, probably from the "Karnak Treasure"; an early Greek bronze goddess; a marble portrait of Augustus; a "Kertch" lekythos by the "Apollonia Painter," and others.

PAINTING

By Florence Seville Berryman

The American Federation of Arts

GOVERNMENT ART PROGRAM

The United States Government's program for the encouragement of art and artists has been the most important event in American painting each year since the program's inception in 1934. Its importance is due to its tremendous social consequences, not only in the welfare of large numbers of American painters but also in the development of national culture by virtue of the nation-wide extent of the program.

A larger volume of work was completed during 1937 under the three different Government art projects than during any previous year. It will be recalled that two of these projects are under the Treasury Department: first, work under the permanent Section of Painting and Sculpture of the Procurement Division; second, the Treasury Relief Art Project, also under direction of the same Section, but financed with Works Progress Administration funds.

In 29 States and the District of Columbia 140 Treasury Department mural projects were completed and in most instances installed, 79 being under the Painting and Sculpture Section and 61 under the Relief Art Project. Fifteen States received murals from both sources.

Murals by 11 different painters were completed for the new buildings of the Department of Justice and the Post Office Department in Washington, two of the most important jobs open to artists since the Government projects began. In the first mentioned building are two murals each, by John Steuart Curry and Leon Kroll, and one each by John Ballator and Louis Bouché. In the second are two murals each by Alfred Crimi, Rockwell Kent, Ward Lockwood, Frank Mechau, William Palmer and Eugene Savage, and one by Tom Lea.

The subjects of the various murals are supposed to be related to the history or activities of the respective Departments. Both Mr. Palmer and Mr. Mechau, for instance, have depicted the hazards of stage coach days, the former painting "Stage Coach Attacked by Bandits," the latter an overturned stage coach and an Indian massacre. The treatment of this mural evoked some adverse discussion, because all the women being scalped are nude instead of being clad in the hoopskirts of the era.

THE ROCKWELL KENT MURAL EPISODE

Rockwell Kent's mural of the "Delivery of the Mails" also drew fire

from various sources. It represents a postman handing a letter from Alaskans written in an obscure dialect to the Puerto Ricans. The message attracted no attention until Vilhjalmar Stefansson, the Arctic explorer (commissioned by a Washington newspaper), saw the mural and translated the message: "To the people of Puerto Rico. Our friends. Go ahead. Let us change chiefs. That alone can make us free." Considerable controversy followed. Dr. Rafael Martinez Nadal, president of the Puerto Rican Senate, denied that a majority of his people wanted freedom from the United States, and also criticized the artist for painting Puerto Ricans to look like "a bunch of African bushmen." Delegate Anthony J. Dimond of Alaska declared the artist had no right to suggest that any of his people, particularly the loyal Kuskokwims, in whose dialect the message was written, were attempting to stir up rebellion against the United States Government. By the request of Postmaster General Farley, Mr. Kent was asked to substitute another message for the mural, in English, to be painted in by another artist, at Kent's expense. The latter planned to sue the Treasury Department if the mural is changed before he is paid in full ($3,000) as it is still his property.

POST OFFICE MURALS

California was the recipient of the largest number of mural projects (20) from the Section of Painting and Sculpture and the Treasury Relief Art Project. In all but one instance, the murals are in Post Offices in the cities named. They include: mural by Suzanne Scheuer, Berkeley; by Milford Zornes, Claremont; by James Redmond, Compton; several murals by Norman Chamberlain, Huntington Park; one by Belle Baranceanu, La Jolla; one each, by Helen Forbes and Dorothy Puccinelli, Merced; a series of lunettes by Ray Boynton, Modesto; by Henrietta Shore, four lunettes, Santa Cruz, and one, Monterey; one by Elise Seeds, Oceanside; by John Law Falker, South Pasadena; by Paul Sample, Redondo Beach, two; one by Moya del Pino, Redwood City; by Mallette Dean, Sebastopol; by Gordon Grant, Ventura, and by George Harris, Woodland. Thomas Laman painted three mural panels for the court room of the Eureka Post Office and Court House.

Illinois was one of the larger beneficiaries, with nine projects completed, all in Post Offices or Postal Stations, as follows: by Gustaf Dalstrom, for Gillespie; by Edwin Boyd Johnson, for Melrose Park; J. Theodore Johnson, for Morgan Park, Chicago; Carlos Lopez, for Dwight; Hildreth Meiere, Logan Square, Chicago; Edward Millman, for Moline; Archibald Motley, for Wood River; Dan Rhodes for Glen Ellyn; and William S. Schwartz, for Eldorado.

New Jersey.—For the Summit, Post Office, Fiske Boyd painted two murals; Thomas Donnelly did one for the Ridgefield Park Post Office. Aaron Douglas decorated the Social Room of the Stanley S. Holmes Village Housing Project in Atlantic City. An all-over mural by Gerald Foster was painted for the Post Office of Cranford and two panels by Charles Ward were installed in the Trenton Post Office and Court House.

New York was close behind California in number of mural projects completed and installed—11. One of the outstanding achievements is the series of frescoes in the dome of the main rotunda, U.S. Customs House, New York City, by Reginald Marsh; there are eight cartouche spaces in full color, and between each, narrow panels executed in grisaille. The Harlem PWA Housing Project, in New York City, has two panels by Elsie Driggs in the children's playroom, and linoleum murals by Domenico Mortellito in the open-air entrance passageway; the last-named artist also painted large panels and lunettes for the Port Chester Post Office. Other murals for the Post Offices of various cities in New York were as follows: by Charles Rosen, for Beacon; by William Gropper for Freeport; by Frederick Knight for Johnson City; lunettes by Thomas Donnelly for Mt. Kisco; panels by Ernest

Peixotto for Oyster Bay; by Harry Lane for Port Washington; two large panels by Guy Pene du Bois for Saratoga Springs; by Henry Billings for Lake Placid; by Arnold Blanch for Fredonia; by J. Theodore Johnson for Garden City; by Georgina Klitgaard for Goshen; by Peppino Mangravite for Hempstead; and by George Picken for Hudson Falls.

Ohio.—Thirteen mural projects were completed in Ohio. The Post Office of Bedford has a mural by Karl Anderson; Canton's Post Office has six large panels by Glenn Shaw; the PWA Housing Project of Cleveland has murals by Earl J. Neff and two panels by Charles Campbell; the Aeronautical Museum of Dayton's Wright Flying Field has ten panels by Robert J. Smith for the balcony hall. In the Post Office of East Liverpool is a lunette by Roland Schweinsburg; in Hamilton six lunettes by Richard Zoellner; in that of Upper Sandusky, one mural by Alois Fabry who also painted two for Portsmouth; in Orrville by Aldo Lazzarini; in Barnesville by Michael Sarisky; and in Springfield two by H. H. Wessel. Cleveland's University Center Postal Station has a mural by John Csosz.

Pennsylvania was the fourth State having a large number of mural projects completed during the year. George Harding painted seven murals for the Philadelphia Customs House and Appraisers Stores. The remaining projects were in Post Offices; Walter Gardner painted a series for Honesdale; Peter Blume, one for Cannonsburg; Paul Mays, two for Norristown; Kindred McLeary and Stuyvesant Van Veen each one for the Pittsburgh Post Office and Court House; Paul Rohland, one for Mt. Union, and Harry Scheuch, one for Scottdale.

FEDERAL ART PROJECT

It will be recalled that the Federal Art Project, the Government's third activity in the field of painting, comes under the Works Progress Administration, and the emphasis is on relief, whereas in the two Treasury Department projects, it is on quality. Nevertheless, much excellent work is done under the Federal Art Project as well as under the others. To mention a few outstanding projects at random, will illustrate the far-flung activities of the F.A.P. Maynard Dixon worked on the largest single mural painting in San Francisco, in a new medium—cement color, applied with a trowel instead of a brush. It covers a wall 16 × 85 feet in the courtyard of the new Presidio Junior High School, and represents historical episodes. In Birmingham, Alabama, Frank Hartley Anderson and Martha Fort Anderson painted murals of world discoveries in the Library of the Lakeview School. Louis Ferstadt painted a series of panels covering 672 square feet, on the theme "Woman's Influence" at Hunter College, New York. Edward Laning's large mural (covering about 2,500 square feet) illustrating the "Role of the Immigrant in the Industrial Development of America" was installed in the main dining room at Ellis Island.

The Federal Art Project exceeds the two Treasury Projects in amount of work done, having inaugurated nearly twice as many projects in a shorter space of time. Prior to September, 620 murals had been completed under F.A.P. and 95 others were in progress (for a period of about two years) as against 372 mural projects under the Treasury Projects combined.

Its social aspects also tend to involve the Federal Art Project in discordant situations, such as developed in New York City the end of 1936, following WPA layoffs. After an order for dismissal of 1,923 persons from the Federal Art projects there (a cut of 19%) a serious riot occurred between artists and police under orders to disperse their pickets. Two hundred and nineteen artists participated in a stay-in strike at F.A.P. offices, demanding cessation of layoffs, and fought the police with fists, teeth and feet against night sticks. All the strikers were arrested, one of the largest arrests in New York police history, requiring nearly all of the city's "Black Marias." At

a subsequent hearing, sentence was suspended. Last summer, 70 of the artists dismissed from the Federal Art Project held an exhibition at the American Contemporary Arts Gallery in New York City, entitled "Pink Slips over Culture," the show having been arranged by the Artists Union, which takes a leading part in opposing any curtailment of F.A.P.

Another phase of Federal Art Project troubles comprises attitudes of the lay public. To illustrate, a "tempest in a teapot" will suffice. Dr. George C. Ruhland, Health Officer of the District of Columbia, ordered some Mother Goose mural paintings removed from the wall of the Children's Building at the District Tuberculosis Sanatorium at Glenn Dale, Maryland. They had been painted by Bernice Cross under the District Federal Art Project. Dr. Ruhland considered the work "grotesque" and following the "unfortunate modern trend" in art. George E. Allen, D.C. Commissioner supervising the Health Department and hospitals, is also W.P.A. administrator for the District; he announced that a jury of "competent art critics" would be asked to pass judgment. A WPA official declared the mural was Government property and no one had a right to remove it without Federal authority. The Superintendent of the Sanatorium stated that the mural had been on the wall a year and a half, and seemed to please the children, hospital attachés and visitors. The *Washington Star* had suggested that a jury of children should pass on the mural, as it was painted for children. Commissioner Allen subsequently had a youthful jury appointed from the public schools (six children, aged 10 or 11 years). They were taken to see the murals, questioned separately and informally about their reactions which proved to be predominantly pleasant; so the murals remained. This little comedy brought to light the fact that another Federal Art Project painting at the same sanatorium, had already been painted out under the superintendent's direction. The artist has threatened to take court action to force restoration of his work.

MISCELLANEOUS MURALS

Missouri.—A number of outstanding mural projects were completed under state and private auspices. Thomas H. Benton's series depicting the social history of Missouri from the days of trapper and trader to the era of Boss Prendergast, in the lounge of the House of Representatives, State Capitol at Jefferson City, Mo., was one of the most important. It was the artist's first commission from his native State. The Legislature had appropriated $16,000 for these murals, and Benton worked on them for 15 months. Many of his figures are portraits of contemporary Missourians. On completion early in the year, the work stirred much controversy. Some people considered it a faithful portrait of the State's history and life, others regarded it as an "insult," accusing the artist of omitting the "beautiful and representative phases of historic Missouri" and depicting the State instead, as a "houn' dawg state" inhabited by "gaunt, ugly caricatures." Negro organizations protested the painting depicting the beating of negro slaves, as "degrading to the race"; the dairy cow in the mural seemed to other critics "too skinny for any Missouri cow"; one legislator criticized Benton for using "$2,751 worth of eggs" in his paintings, which brought out the fact that the artist had used approximately 36 dozen, worth about $10.50. Benton replied to his critics that the things he painted were "beautiful" to him, that he had "no time for hocus-pocus," that he painted "Jesse James because he inaugurated a rather important business in the United States," etc.

Kansas also has a nationally famous native son in the painter John Steuart Curry, whom it regards with mixed feelings of pride and apprehension, judging from recent actions. Inspired perhaps by the spectacle of Missouri's Benton murals, the State Art Commission of Kansas invited Curry to paint the State's history on the State Capitol walls; the artist was reported to have agreed to the commission for $20,000. Then the State Art Commission stipulated that

the murals were to be done "in a sane and sensible manner," omitting "outlandish characterizations of historical Kansas figures as John Brown and Carrie A. Nation," and that he should avoid "controversial paintings such as those of Thomas H. Benton which aroused a furore at the Missouri Capitol." Finally, the murals must not manifest "too much modernism."

Mural decorations were painted by Walter A. Bailey for the foyer of Kansas City's new municipal auditorium, a monumental $6,000,000 building. These murals comprise four panels, each 17 × 9 feet, representing the four seasons literally, and the four ages of man in symbol.

Will Rogers Memorial.—A feature of the Will Rogers Memorial "Shrine to the Sun" a hundred-foot tower of mediaeval style architecture, rising at an elevation of 9,000 feet on the promontory of Cheyenne Mountain, near Colorado Springs, is a series of mural paintings by Randall Davey, which relate the history of the Pike's Peak region. The memorial, conceived and paid for by Spencer Penrose, was formally dedicated on Sept. 6, although it had been open to the public several months earlier.

MURAL PAINTERS VERSUS LABOR UNIONS

It was perhaps inevitable that the tremendous upsurge of trade unionism during 1937 would involve artists. Construction developments of the 1939 New York World's Fair brought mural painting commissions to 13 painters who were added to the Board of Design. They were Dunbar Beck, Henry Billings, Pierre Bourdelle, Francis Scott Bradford, Carlo Ciampaglia, Andre Durenceau, Julian E. Garnsey, James Owen Mahoney, Hildreth Meiere, Ernest C. Peixotto, Eugene Savage, John Sitton and John Scott Williams, most of whom are members of the National Society of Mural Painters. Subsequently, a statement appeared in a New York paper, issued by an A.F.L. affiliate, the United Scenic Artists of America, Local 829, that all World's Fair Murals must be done by union labor, artists or not. The statement was confirmed by responsible World's Fair authorities, who appear to have signed a blanket guarantee that all work done on the Fair grounds would be done with union labor. The membership of the Scenic Artists Union comprises chiefly theatrical and motion picture designers and scene painters, although it includes a number of famous theatrical designers such as Norman Bel Geddes, Robert Edmond Jones, Lee Simonson and Jo Mielziner. The union has increased its strength and has now raised its initiation dues to $500. Because of the nature of their work, mural painters all have to have a different basis for scaling than the 8-hour-day and 40-hour-week of the theatre and movie production painters.

The National Society of Mural Painters indicated that the issue would be fought, but the Society faces trouble in its own membership, as some of the younger painters favor joining a union. Arguments for affiliation are that troubles between painters and building trades unions with their "regulatory annoyances" would be easily settled if the painter were a union man; that protection of his living wage would be afforded; competition from underselling artists smashed; that the artist should combine with his fellow workers to strengthen the common good; that the mural painters would obtain enormous power. Arguments against affiliation are, that it would threaten an artist's freedom and individuality, the right to work at whatever price satisfies him; that unionization might elevate the cost of murals to a peak where clients might refuse to follow and eliminate murals altogether; that the painter must also be his own craftsman and executant of most of his work, and in complete control of his assistants on large undertakings owing to the highly personal nature of the work.

On the face of it, this development appears to have sinister possibilities. Millions of union workers in the building trades presumably back the Scenic Artists Local. Their restrictions may eventually be enforced on

the entire Government mural program, since the Treasury ruling states all government buildings must be done with union labor. A further grave probability is that young painters of promising talent but no funds to pay $500 initiation fees might be debarred from work, or even that young painters with funds might be kept out, as the unions limit their membership at will if there is not enough work for those already members. Although there was no hint of the last-mentioned in the World's Fair mural controversy, a stone-cutters' union in a middle western city during the year, did prevent a sculptor from executing his designs done on commission. He expressed willingness to join the union, but was refused admittance, because several members were already out of work, and needed the job, cutting the stone from the sculptor's designs and scale models. However, toward the end of the year, the World's Fair mural controversy did not appear to have gotten beyond the name-calling stage. John Sloan, a famous painter not personally involved, stated through the press that the Fair would have "the worst aggregation of wall paintings ever assembled," that the union's members "do commonplace work on anything from a scroll to a mural—they are tradesmen." Sloan's further statement about a "chamber of horrors" evoked caustic reply from a representative of the United Scenic Artists of America.

THE MELLON GIFT

Andrew W. Mellon's magnificent gift to the nation (fully described in THE AMERICAN YEAR BOOK, 1936) comprising an art collection conservatively valued at $19,000,000 with a $10,000,000 gallery to house it and an endowment fund of $5,000,000 was accepted when an enacting bill passed both Houses of Congress March 15, with a final passage March 18. The bill passed the House without a dissenting vote, but the Senate discussed it, as a small group objected to the self-perpetuating trustees and the possibility that American art might not be considered worthy of addition to the collection. Two Senate amendments provided that the gallery should be open free to the public, and that contemporary American artists should be permitted to exhibit their work in the proposed Gallery for reasonable periods, with the approval of the trustees, to encourage American art. Dr. Charles G. Abbot, secretary of the Smithsonian Institution, declared that the acceptance of the Mellon gift assures the United States possession of the fifth finest art gallery in the world. The decision to use marble as the building material for the gallery, will raise its cost $2,000,000 more than originally expected.

The Mellon gift aroused some resentment in certain groups of contemporary American painters. Early in the year, the American Artists' Congress passed a resolution objecting to naming it the "National Gallery of Art," on the grounds that a gallery devoted to the great art of the past "in no way represents or fosters the national culture."

In May, Mr. Mellon acquired seven additional masterpieces for the National Gallery, through Duveen: paintings by the Italian Renaissance masters Duccio, Masolino, Mantegna, Giovanni Bellini, and two by Gainsborough from the famous Rothschild collection sold at auction in London, and a life-size sculpture by Donatello.

Mr. Mellon died suddenly on August 26, aged 82; he had lived to see excavation begun toward the building of the gallery. On the following day, occurred the death of John Russell Pope, aged 63, among whose last work was the plan for the National Gallery.

Andrew W. Mellon's name was cleared of the charges of fraud brought against him by Government representatives. By unanimous action on Dec. 7, the U.S. Board of Tax Appeals held that accusations of income tax evasion made against Mr. Mellon, were without foundation, and reduced his tax liability from the figure of $3,000,000 demanded by the Treasury, to a sum estimated at from $400,000 to $700,000, the amount due, a matter of interpreting the intricate

revenue laws. The Board of Tax Appeals found itself in an ironic situation, in this case involving the Government's claim that the gift of the art collection was a subterfuge to deceive the U.S. Treasury, and the Government's acceptance of the same gift as a "notable contribution to the Nation's cultural resources." The additional taxes will be paid from the funds now belonging to charity.

SMITHSONIAN GALLERY

To supplement the National Gallery of Art (the Mellon Gift) it was announced March 10 that plans for a $4,800,000 national museum, to be an "American Luxembourg," with emphasis on portraits and contemporary art, would be sponsored by the President. The building will be part of the group including the National Gallery. Senator David I. Walsh of Massachusetts and Representative Kent E. Keller of Illinois are co-authors of the bill to establish the Smithsonian Gallery, as the new museum would be called. The Plan for the new museum was formulated by Dr. Charles G. Abbot, Secretary and Dr. Alexander Wetmore, both of the Smithsonian Institution; Admiral Christian J. Peoples, director of procurement for the Treasury; Edward Bruce, chief of the Treasury Art Program, and Frederic A. Delano, chairman of the National Park and Planning Board. The proposed gallery envisions a National Portrait Gallery, which may possibly include the superb Thomas B. Clarke collection in the Mellon gift. The historical interest of the Clarke collection of portraits is greater than the aesthetic interest, and the National Gallery may be willing to allocate it to the Smithsonian Gallery. There would also be transferred the extensive collections of paintings and other arts now owned by the Smithsonian Institution, some of which are on view in the Natural History building. It was rumored in the spring of 1937 that Mr. Mellon offered $1,000,000 toward the proposed Smithsonian Gallery, and an unamed woman, another $2,000,000. However, the Government's economy program appeared to rule out consideration of the new gallery's appropriation in the 1938 budget.

THE BACHE GIFT

Jules S. Bache, banker and art collector of New York City, whose private collection of old master paintings is one of the most famous and most valuable in the United States, announced the end of April that he had presented to the State of New York the entire collection, valued by experts at $20,000,000, together with his residence, an English "basement style" house at 814 Fifth Avenue, and that he will endow it sufficiently to have it administered as a free public museum. The foundation was approved by the State Board of Regents.

Of the collection of 77 old master paintings, a number are already well known through frequent exhibition and reproduction. They include Raphael's portrait of Guiliamo de Medici, Duke de Nemours, once owned by Grand Duchess Marie of Russia, which cost Mr. Bache $600,000; portrait of a Carthusian monk by Petrus Christus; Watteau's "French Comedians," a painting once owned by Voltaire, who presented it to Frederick the Great of Prussia, retained by the former Kaiser when he abdicated in 1918, and bought from him by Duveen; Botticelli's "Coronation of the Virgin"; Holbein's portrait of Edward VI as Prince of Wales; Goya's popular child portrait of Don Manuel Osorio de Zuniga playing with his pets; Ghirlandajo's portrait of Franscesco Sassetti and his son Teodoro; Carlo Crivelli's Madonna and Child; Bellini's Madonna and Child with Saints; Rembrandt's Christ with a Pilgrim's Staff and two others; Fragonard's "Le Billet-Doux." The Ghirlandajo, Crivelli, Bellini and one other painting, by Tura, were acquired by Mr. Bache in 1928 for the sum of $1,000,000. The collection is said to be one of the richest in the world in Flemish art, and is representative of the great Italian, French, Dutch, German and English schools.

The collection also includes miscellaneous decorative arts, such as Luca della Robbia reliefs, tapestries, sculpture, Italian and English furniture, Limoges enamels, etc., all of which add to the home-like effect of the gallery.

The Bache collection was opened to the public Nov. 1. Mr. Bache himself is honorary director, and the board of trustees is composed of Lord Duveen, Grover A. Whalen, Justice Lewis L. Fawcett of the Brooklyn Supreme Court, Maurice Newton, and Louis S. Levy, with Edward P. Goetz as treasurer and Mary Duggett Benson, secretary and custodian.

NEW GUGGENHEIM FOUNDATION

A foundation to foster American interest in abstract and non-object art (chiefly painting) was established in New York City by Solomon R. Guggenheim who brought together during the past decade one of the largest collections of this type of painting in existence. This collection, of which the Baroness Hilla Rebay von Ehrenweisen is curator, will be the nucleus of the public museum to be established by the foundation. The latter will perform other services such as the promotion of public appreciation of art, through lectures, publications, scholarships and purchase of works of art. The amount of the endowment was not revealed, but is believed to be several million dollars.

CONSTITUTION ANNIVERSARY EXHIBITION

Paintings of nearly every conceivable classification, from prehistoric and primitive (African bushmen rock paintings) to ultra modern contemporary work, were shown in hundreds of exhibitions held during 1937 in every section of the country. These exhibitions could be classified in several categories.

Of those held to celebrate some important anniversary, the Loan Exhibition of Portraits of the Signers and Deputies to the Convention of 1787 and Signers of the Declaration of Independence in commemoration of the 150th anniversary of the formation of the Constitution of the United States was outstanding. This show was assembled by the United States Constitution Sesquicentennial Commission (Sol Bloom, chairman) and opened at the Corcoran Gallery of Art, Washington, D.C., Nov. 27, to remain to Feb. 1, 1938. The exhibition includes 230 catalogued items, of which more than 150 are portraits, some of them never before exhibited; there are also miniatures, water color sketches of the homes of some of the men, needlework and such odd items as the printed report of the Committee of Style, all having some relation to the Signers, their families and associates. An excellent illustrated catalogue is available. The primary interest of this exhibition is historical; but it is also representative of the work of such early American masters of portraiture as West, Copley, the Peales, Stuart, Trumbull, Sharples, St. Memin, Mather Brown, Earl, Feke, Malbone, Sully, and others.

OTHER EXHIBITIONS

As part of the celebration of Chicago's Charter Jubilee an exhibition of living Chicago artists' work was held on the Navy Pier—one mile of paintings all hung "on the line," 942 catalogued entries filling what was said to be the "world's largest gallery," the length of four city blocks.

The Washington County Museum of Fine Arts, Hagerstown, Md., held during September an exhibition of American Painting before 1865 to celebrate the 75th anniversary of the Battle of Antietam, also the 200th anniversary of the founding of Washington County and the 175th anniversary of the founding of the city of Hagerstown.

One of the outstanding shows of the year (held for its own sake) was that of Fantastic Art, Dada and Surrealism, held at the Museum of Modern Art in New York the end of 1936 and part of January, 1937, after which 85 per cent of it traveled to Philadelphia, Boston, Springfield, Milwaukee and San Francisco. The com-

plete exhibition had 700 items in painting and other media, including decalcomania and thread dropping, representing several centuries (from Hieronymus Bosch to Walt Disney and Rube Goldberg). More than 50,000 persons visited the show in New York City.

The Expositions at Dallas, Tex. and Cleveland, O. continued for the second year; and the Museum of each city assembled an entirely new exhibition. That of the Dallas Museum of Fine Arts was considered superior to the one held in 1936. A feature of the 1937 exhibition was a loan exhibit of 20 works from a collection of 43 old master paintings formerly in possession of the Marquis of Torreteglia, Lima, Peru, which have been in storage a quarter of a century. It is said to be the most important collection ever to have appeared in the Southwest.

A number of important exhibitions were held to mark the opening of new buildings, galleries, etc. A great survey of French painting from Poussin to the 20th century dedicated nine new galleries of the Philadelphia Museum in the spring. The reconstructed Berkshire Museum in Pittsfield, Mass., reopened in June, after two years of remodeling, with a loan exhibition illustrating the development of landscape painting; and another exhibition from the Museum's own collections. The first art museum of the "Inland Northwest" (to serve the Dakotas, Wyoming, Idaho and Montana) was dedicated in October on the campus of Montana State University, Missoula, with an inaugural display of important American paintings. The Brooklyn Museum held a series of exhibitions including one of paintings by American Impressionists, to celebrate the conclusion of a several years' reorganization project. Finally, the Museum of Modern Art, New York City, opened Nov. 15 a branch gallery in Washington, D.C., with an exhibition of paintings by Cezanne, Gauguin, Van Gogh, Renoir and Seurat.

Of many excellent feature exhibitions, it seems invidious to mention only a few, such as the four-month exhibition of paintings by Pierre-Auguste Renoir at the Metropolitan Museum of Art, New York City; the "most comprehensive exhibition of the art of Paul Cezanne yet seen in America," requiring three years' preparation, at the San Francisco Museum of Art in September; and the splendid exhibition of Dutch paintings of the 17th century at the John Herron Art Institute, Indianapolis, in the spring, to which several Dutch museums contributed, giving our Middle West its first complete survey of this national art.

THE RENTAL ISSUE

One very significant occurrence in connection with exhibitions was the apparent collapse of the rental issue, which was an outstanding controversy in 1936. It will be recalled that the American Society of Painters, Sculptors and Gravers sought to collect a rental fee for the exhibition of their works in public museums. In the spring of 1937 the Society decided to abandon its boycott of museums refusing to pay rental fees; this action occurred about the time of the Corcoran Gallery's refusal, in connection with its 15th Biennial, which opened in March. The Carnegie Institute International, opened Oct. 15, appeared to confirm the demise of the rental issue, as a number of well-known painters who stayed out of the 1936 International, were back this year.

PRIZES AND AWARDS

European painters received seven of the eight prize awards at the Carnegie International: Georges Braque, French abstractionist, 1st prize of $1,000 for his "Yellow Cloth"; Felice Casorati, Italian, 2nd prize; Josef Pieper, German, 3rd; Robert Philipp, American, 1st Honorable Mention and $400; 2nd, 3rd and 4th honorable mentions went to German-Austrian, Spanish and French painters, respectively; the Allegheny Garden Club prize to a Czechoslovakian painter. This is the only annual international exhibition of contemporary paintings in the world.

The Detroit Institute of Arts resumed its annual exhibition of contemporary painting, after a lapse of five years. The Los Angeles Museum inaugurated a triplicate prize plan in its 1937 annual, whereby radicals, liberals and conservative painters were judged by juries of their own classes, and prizes were awarded in each class. The widening chasm between much contemporary painting and suitability for home decoration, led to the inauguration of a new kind of prize award at the exhibition of Associated Artists of Syracuse, N.Y. for "the painting most suitable for home decoration, of medium size, non-irritant subject matter, handled in a not too radical technique."

AMERICAN LOANS ABROAD

The United States lent more lavishly to foreign exhibitions than ever before; more than 30 paintings from American owners were in the Paris Exposition's great retrospective exhibition of French Art; in the same Exposition, the United States had a pavilion of arts and crafts and a Federal Art Project show of recent and contemporary American paintings. American collectors and museums made generous loans to the great memorial exhibition at the Uffizi Gallery, in Florence, Italy, commemorating the 600th anniversary of the death of Giotto di Bondone; and sent 35 canvases to the great Frans Hals exhibition in Haarlem, Holland, constituting more than one-third of the show. On the other hand, Sweden sent a large exhibition of Swedish art to travel throughout the United States in celebration of the tercentenary of the arrival of the first colony of Swedes in America; illustrating 8,000 years of history from arrowheads to the present time, the exhibition opened in New York City in September and is now on a circuit of 10 other cities.

SCULPTURE

By Rose V. S. Berry

Art Critic and Writer

GOVERNMENT AND ART

Unless it be written there is no way of knowing how much the story of American sculpture varies from year to year. The "depression" has added a strange chapter to the history of American art. Through government agencies artistic commissions have greatly increased. Twelve hundred Federal projects in which sculptors and architects have been associated were reported as "finished" during 1937. This means that many localities have become aware of artistic possibilities in this union of aesthetic forces. It means that if the American sculptor has been equal to the artistic and technical test of his talent throughout the vast United States, architect and sculptor will have assumed a new relationship in the consciousness of the American public. These commissions for the sculptors have not been given thoughtlessly or carelessly. They have been assigned only after plans have been submitted, and in competition the sculptors have worked out their problem of ornamental design in accordance with the architectural requirements. There is much to say in the attitude of the Government. It has offered in a ready and willing manner what has never been done in the same way before. The result awaits the verdict of Time.

TRENDS AND INFLUENCES IN SCULPTURE

While the majority of sculptors adhere to the ideals that have withstood the use and abuse of passing centuries, the trend toward defiance of traditional standards increases. The art of Congo increases its influence upon American production. Massive proportions with Mayan adaptations are evidence of Mexican travel. Java

and the South Seas, Angkor Vat and Angkor Thom are present in dancing figures of grace and barbarism. These tendencies as a result of the Guggenheim Fellows *versus* the Prix de Rome men tell the story of a world grown smaller if they do not proclaim so emphatically an American viewpoint.

Other tendencies deal directly with the inviolable laws of mass and proportion—laws which the very nature of sculpture enforces. To escape the shapeless block of stone or mound of clay, sculpture must assume some semblance of form. To retain an upright position the most graceful bit of tenuosity must have the strength to stand and remain standing. Jacob Epstein must give form to his two-and-one-half-ton-block of pink alabaster before it is a recumbent Christ. Young Sterling Calder must give strength to the thread-like spiral that becomes a man in his hands, if the graceful, airy-nothingness is to abide. Between these two extremes there are the sculptors who seek to glorify the cube and the globular sphere, and who persist in elongating to the point of collapse their clay, bronze, or wood. And always there is the law-abiding artist who accepts the limitations of his art and by way of different mediums—new patina, variable use of light and shade, and all that intervenes between the serious and gay, the formal and informal, the new and the old—succeeds in saying something different and worth while.

EXHIBITIONS AND AWARDS

The National Academy of Design gave sculpture awards to Ralph Humes who, for the second time, took the first prize; Bruce More, a Connecticut sculptor, received second; Joseph Kiselewski and Arthur Lee were among others honored.

The Pennsylvania Academy of Fine Arts awarded its first sculpture prize to Anna Hyatt-Huntington, the only award allotted to sculptors in 1937. The critics, however, commended Albert Laessle's portrait of Joseph T. Pierson and the work of George Demetrius, Antonio Cortizas, Gertrude Lathrop, William F. Bogar, Jr., Ralph Humes, Charles Rudy, and Adolph Weinmann.

Chicago's Art Annual gave its first prize—the Frank A. Logan award—to Carl Hallsthammar for his torso study carved in wood and called "Venus in Red Cherry." The Women's Painters' and Sculptors' Society, with exhibits from almost every State in the Union and from Canada, awarded prizes to Sylvia Kodranoff's "End of Summer," Marian Sanford's "Diana," and Lillian Swann's "Diana." The Hoosier Exhibition (Indiana Art Society) in Chicago, gave sculpture prizes to Charles V. Hickox, Mrs. Paul Payne, and Robert Davidson.

The Art Institute of Kansas City gave its sculpture award to Merle Lozier. The Oakland Annual Sculpture Exhibition had three awards: Brent Carleton, D. C. Haines, and Howard Buel. San Francisco's Art Association gave its first prize to the sculptress, Adaline Kent.

The Paris Exposition Jury honored 12 American sculptors. First prize was given to Velsey Howard, and second prize went to three sculptors—Jo Davidson, Herbert Hazeltine, and Miss Chapin. Third prizes were given to McLeod, Paul Manship, Bell, and Gertrude V. Whitney. Fourth prizes went to Smolin, Davis, and Janet Scudder. A fifth award went to Malvina Hoffman.

SCULPTURE BY WAY OF EARTH AND FIRE

American connoisseurs and sculptors have long looked askance at ceramic sculpture, but 1937 has broken that spell. Fifty sculptors exhibited upwards of 100 pieces of ceramic sculpture by some of the best known artists with interesting results. Henry Varnum Poor, one of the best American potters, contributed a "Kansas Madonna" (a mare and her colt). Carl Walter showed a rustic "Ichabod Crane." Waylande Gregory exhibited a pair of "Sun-Bathers." Walter Anderson, Alexander Blazys, Edris Eckhardt, and Victor Schreckengost offered groups that attracted

favorable attention. Among other exhibitors were Alexander Archipenko, Russell Barnett Aiken, Paul Bogatay and Sorcha Boru who were successful in their combination of form, color, and the charm of a glaze.

The annual exhibition of soap sculpture is assuming greater proportions and gaining in contributors. Its place in the art of sculpture may best be estimated by the names of the men who serve as jurors. The men, who this year awarded 97 prizes were Alexander Archipenko, sculptor; George F. Ball, designer; Alon Bement, art educator; Gutzon Borglum, sculptor; Harvey Wiley Corbett, former president of the National Architectural League; Walter Pach, painter; Ernest Piexotto, mural painter; and Ely Jacques Kahn, architect. The sculptors Robert Laurent, Leo Friedlander, Harriet Frishmuth, Leo Lentelli, Elizabeth M. Nealon, Fred Press, Betty Keenan, Tom Stevens, Duane B. Bryers, and Joseph Schoenberger were among the prize winners.

ONE-MAN EXHIBITIONS

William Edmondson, a Nashville Negro, claiming to have received a command from God to preach, cut tombstones, and model sculpture, was an exhibitor at the Modern Museum where he showed "Mourning Doves," "Mary and Martha," and "Large Angel."

George L. K. Morris, co-editor with Hans Arp, of the Paris magazine *Plastique*, who has been favorably received by the critics of Paris and London, included a number of abstract sculptures in his New York exhibition.

After several years in Paris, the young American sculptor, Alexander Stoller, held his first exhibition in New York, where he showed work in bronze, plaster, wood, and subjects cut directly in stone.

Antonio Saleme, twice a Guggenheim Fellow, gave a good account of his talent in the large figures—Maillol style—with a handling that was still definitely his own.

John Rood, head of the Fine Arts Department of Ohio University, included some fine animals carved in mahogany and walnut, in his first New York venture.

Malvina Hoffman gave a comprehensive exhibition in Richmond, Va. Anna Hyatt-Huntington included upwards of 70 pieces of sculpture in her exhibition which made a circuit including the Pacific Coast. Sally Ryan, who has held successful exhibitions in London and Paris, won high praise for her show, especially her handling of several negro subjects. Among others who gave exhibitions were Emily W. Miles, Jacques Schneir, Harold Gebhardt, Doris Caesar, Richard Davis, and Ward Montague.

FELLOWSHIPS

Prix de Rome, this year was conferred upon John Amore, of New York. The Paris prize offered through the Beaux Art Institute of Design, which entitled him to European study, had been his previously. He was one of 30 applicants for the Prix de Rome. Joseph Coppolino, a graduate of Cooper Union, and George Kratina, of the Yale School of Fine Arts were given Honorable Mention by the jurors Herbert Adams, Chairman; James E. Fraser, John Gregory, Walker Hancock, and Adolph Weinmann.

Guggenheim Fellowships, this year, were awarded to Mrs. Lu Duble, instructor in Bennett Junior College, Millbrook, N.Y. and Ahron Ben-Shumel, sculptor of New York City.

PLACEMENTS AND COMMISSIONS

"The Make-up Man" by Max Kalish, a figure symbolic of newspaper men—for which newspaper men posed—was placed in the West Street Lobby of the New York Post Building. A portrait bust of Will Rogers, by Jo Davidson, was placed in the new Rogers Memorial in Colorado—the Shrine of the Sun. "Junipero Serra" a full-sized figure, by Ettore Cadorin, was recently placed in the Capitol Building, Washington. D.C.

Three sculptors have been appointed to do work for the Interior Building in Washington, D.C.—Boris

Gilbertson of Chicago, Ralph Stackpole of San Francisco, and Heinz Warnecke of New York.

Eighteen sculptors have received commissions for the San Francisco 1939 Exposition—Ralph Stackpole, Jacques Schnier, William Gordon Huff, David Slivka, Michael Von Meyer, Haig Patigian, Adaline Kent, O. C. Malmquist, Brents Carlton, Sargent Johnson, Carl George, Ruth Cravath Wakefield, Lulu H. Braghetta, Cecilia Graham, Ettore Cadorin, Benjamin Bufano, Donald Macky, and Helen Philips.

Among the sculptors engaged to work with the architects for the New York Exposition are Edmund Amateis, Gaetano Cecere, James Earle Fraser, Leo Friedlander, Joseph Kiselewski, Paul Manship, Lee Lawrie, Joseph E. Renier, Carl I. Schmitz, George H. Snowden, and Albert Stewart.

ARCHITECTURE

By Louis La Beaume

Fellow, The American Institute of Architects

GENERAL

The hope expressed in the 1936 summary that the year 1937 might develop a marked increase in building activity has not been justified. Owing, therefore, to continued depression in the building field, it was difficult to evaluate progress in either architectural design or technical methods of construction. Some further liquidation of existing projects would seem to be necessary before investors may feel encouraged to proceed with renewed activity on an extensive scale. That there are many obsolescent structures in all of our large cities, is generally admitted, but occupants and owners are making shift with what they have as best they can.

The tendency of the Federal Government throughout the year 1937 was to restrict, rather than to expand, its assistance to States and municipalities contemplating public works. The Federal Building Program appeared also to show signs of decreasing volume. As the national program, begun under the Hoover Administration and continued through the ensuing Adistration, attained completion, few new projects were proposed, and the temporary stimulation resulting from the expenditure of public funds would seem to have almost reached an end.

HOUSING

The subject of mass housing continued one of great interest, and new approaches to its solution were made by the Federal Government, municipalities, social agencies and the architectural profession. The Wagner-Steagall Housing Bill (United States Housing Act of 1937) provides for a public housing program different in character and larger in scope than the recent P.W.A. Housing Program. This bill created a new United States Housing Authority under the direction of an administrator. Such States and municipalities as have duly authorized local housing authorities may initiate projects in their areas. The United States Housing Authority will act as banker, and the bill provides for loans to these local housing agencies up to a total of $500,000,000, capital grants to a total of $30,000,000, and annual contributions up to a total of $20,000,000 a year. Funds for loans, grants and annual contributions are to be made available gradually over a three year period. It has been estimated that the full use of these funds, during the next three years, could conceivably produce 140,000 new family units. Under the old Housing Division of the Federal Administration of Public Works, 21,700 units were produced over a period of four years. The major projects comprising these units which have been carried to practical completion, vary in size and character according to locality. They have been carefully designed and economically and sub-

stantially built, and are interesting as exhibits of what can or cannot be done to solve the housing problem of smaller income groups. About 54 projects have been approved by the former P.W.A. Housing Division, and await funds and local co-operation.

The Federal Housing Administration, another governmental agency, continued its policy of guaranteeing building loans. It was hoped by the Administrator that the sum total of 460,000 new dwellings might be financed through the co-operation of this agency. The results, however, have fallen short of this expectation. From the most trustworthy statistics available, the best estimate of the total new home construction in the United States for the year 1937 would probably not exceed 280,000. Of these new dwellings 180,000 are urban and 100,000 are rural.

The Home Owners' Loan Corporation continued to be helpful in the financing of repairs, remodeling and the rehabilitation of existing structures in the domestic field. The American Institute of Architects continued to devote its best thought to the subject of mass housing, as well as to the small, low-priced, individual house.

THE SMALL HOUSE

Groups of architects in many centers are attempting to serve the small house owner by preparing typical plans to meet varying family requirements. The use of such plans would naturally tend toward a certain standardization, with the resulting economies which standardization might make possible. Not only has the architectural profession given much thought to the possible advantages of standardization, but it is constantly investigating new methods of construction which will tend to lower building costs. Likewise, manufacturers of building materials are experimenting along many lines with the same ends in view.

STANDARDIZATION

For many years buildings of every type have been composed of standardized parts in greater or less degree. These standardized elements have been contributed by separated standardized roofing material, standardized steel shapes, standardized lumber, standardized window frames, standardized roofing material, standardized hardware, standardized electrical and plumbing equipment have all been used. How far the standardization of the completed building unit can be carried is still the subject of experiment and conjecture.

MATERIALS

Scientific ingenuity has very likely been stimulated, rather than retarded, by the economic obstacles which have confronted the building industry. The high cost of the usual building materials has led to the search for substitutes and alternatives. Many excellent products have issued from the laboratory to be placed at the architect's disposal when, as and if he has the opportunity to use them. The architect today, therefore, has at his disposal a richer and more varied palette than was ever employed before. Most of these new materials are being used in current work and may be noticed and admired by laymen in shop fronts, cocktail bars and chic interiors. Were it not for the continued lag in building activity, their usability would undoubtedly be more extensively tested.

CITY PLANNING

Although many universities have introduced courses in city planning into their curricula and are stressing the importance of planning large areas and of considering the interrelation between the many elements which go to make up the normal city, not a great deal of real progress can be noted in the field of practical city planning. It is generally admitted that all of our cities and towns represent a conglomeration of unrelated and conflicting units, with a consequent loss not only of beauty, but of efficiency, economy and utility as well. It is hoped that increasing recognition of the need for improvements by municipal authorities and by the public, may, in time, justify

the efforts which the architectural profession and the architectural schools are making to bring some order out of chaos. Many communities have long established city planning commissions, and data have been accumulated which should be helpful in solving problems of circulation and traffic, and proper land use. Zoning laws already have shown some effect with regard to the limitation of height and of the lot area to be covered. But the well considered and efficiently carried out city plan remains an ideal.

PRIVATE BUILDING

There has been no notable revival in the field of private building. The volume of residential building, both large and small, remains far below normal and considerably below predicted totals. Building for investment has likewise lagged, and few, if any, contributions have been made to the urban supply of office buildings and apartment houses. Also, industry has refrained from undertaking further plant development or extensions on a major scale. The situation has aroused the deep concern, not only of the architectural profession, but also of the manufacturers of building materials, the transportation interests and labor itself. Such business recovery as has been observed over the period of the last four years, has been confined, in the main, to those industries devoted to the manufacture and sale of "consumer goods," that is to say of products perishable in character and needing constant replacement. The heavy industries engaged in the manufacture of more durable items, like building materials described by the broad term "capital goods," have not progressed proportionately. As continued efforts have been made to curtail government spending for public works, these heavy industries are suffering further from the lack of governmental stimulation. In November, 1937 the President called into conference a number of prominent business men in an effort to find means by which private industry and capital might contribute to the recovery of the heavy industry group with consequent increase of income and employment all along the line. The difficulties would seem formidable in view of the present high cost of building materials and existing wage scales, coupled with the fact that equities in existing structures remain in jeopardy. The gravity of the situation may be realized in view of the former position of the construction industry as one of the principal factors in the employment of labor in mines, forests and plants, as well as in the field of transportation and on the actual building site.

ARCHITECTURAL DESIGN

Although it might appear, from the foregoing, that any discussion of architectural design must be regarded, for the time being, as academic, a change of orientation is undoubtedly taking place with regard to architectural practice. Many architects are approaching such concrete problems as are presented to them, from a new point of view. The public itself is divided between the adherents of the familiar, and the proponents of experimentation. It seems, however, that the field of eclecticism is being narrowed year by year in spite of our ingrained conservatism. The period may be approaching when the public will no longer demand, or even tolerate, the accurate reproduction of old forms. A gradual evolution which, whether based on romantic or classical tradition, will modify the architectural scene, may thus be anticipated and even now witnessed.

MODERNISM

The term "modernism" is unsatisfactory but it is used here to identify those more revolutionary approaches to architectural design which are manifesting themselves both in this country and in Europe. Experimentation in the use of new materials and in the new treatment of old materials, has proceeded in Europe for many years, and has had a profound effect on the younger generation of American architects. It should be immediately understood, however, that modernism does not concern itself solely

with the novel use of materials. Its apostles are attempting to formulate what they term a new philosophy of design based not only on function, but reaching toward the manipulation, control and mastery of space. This philosophy, as expressed in their writings, seems to invade the field of metaphysics, and it is sometimes difficult for the layman, or even the architect, to evaluate. New types of plan, based on what is called the interflow or interpenetration of space, result from this philosophy. The elevations are considered the envelope in which these spaces are confined, and are designed as nearly as possible to express not only the spaces themselves but their intersection.

EDUCATION

The architectural schools in the universities and colleges have not been able to escape the implications of this philosophy. In order to prepare their students for an approach to the problems from this new point of view, they have modified, or are modifying, their methods of instruction.

Dr. Walter Gropius, one of the leading European exponents of this new philosophy of design and now a member of the faculty in the Department of Architecture at Harvard University, was formerly director of the New Bauhaus at Dessau. Under his directorship, the work of the Bauhaus gained wide attention. Not only were the principles of Gropius applied to designing architecture; they were extended to embrace the productions of the machine in the whole industrial field. To this influence may be largely attributed the impetus which has been transmitted to industrial designers in this country. So strong has interest in this new movement become, that in September, 1937 the establishment of a New Bauhaus in Chicago was announced.

This new school will be under the direction of Professor Laszlo Moholy-Nagy, a close associate of Dr. Gropius at Weimar and later at Dessau. As announced by the directors: "Because of Dr. Gropius' confidence that Professor Moholy-Nagy will continue the best Bauhaus tradition he granted permission that this School of Design be called the New Bauhaus." For the first year, acocrding to announcement, it is planned to offer instruction in the "Basic Design Workshop," in "Analytical and Constructive Drawing" and in "Scientific Subjects." The student will be taught to handle wood, paper, plastics, rubber, cork, plywood, leather, textiles, metal, glass, clay, plasticine, plaster and stone. He will study geometry, physics, chemistry, mathematics, economics, anatomy and the comparative history of art; he will also study biotechnique (the system of conscious invention), psycho-technique (ability testing), biology, psychology, philosophy, literature, music, printing, light. Thus it may be inferred that the established principles of design, as exemplified by the traditions and teachings of the Ecole des Beaux Arts, are being definitely challenged. These principles have long been followed in practically all the architectural schools in America, under the able direction of French and American graduates of the Ecole. There are now, however, in the United States, five of the internationally minded men who have taught a modern "Architectonic Art, all embracing in its scope, at the original Bauhaus."

PUBLIC INTEREST

Such tendencies as have been noted may signify the degree of public interest in architectural development, although it cannot be said that a large section of the lay public is prepared to understand or accept the new philosophy of design. Conservative minds are still apt to judge the appearance of new buildings by old standards, while, at the same time, responding eagerly to any improvements in the elements of comfort, convenience and durability.

Architectural discussion, however, becomes more and more a matter of general, popular interest. Publicized achievements, such as the Rockefeller Center group in New York and the Williamsburg restora-

tion, have been widely admired and discussed. Controversial questions are seized upon by the press as matters of public interest, even where technical issues are involved. A case in point is that of the recently proposed Jefferson Memorial in Washington. Warm debates took place, not only as to the site involved, but as to the propriety of the classical style proposed. While much confusion will always result from public discussions of this character, the net result may be considered wholesome in that they focus attention on architectural values. It would seem that large sections of the public respond appreciatively to the more conservative essays in modern design, such as the Folger Shakespearian Library, the new Federal Reserve Board Building in Washington, and the Rockefeller Center Group in New York City.

THE PRESS

Only the more dramatic or sensational aspects of architecture receive wide, general publicity, although an increasing tendency toward serious architectural criticism in the newspaper and magazine field may be noted. The professional journals are as yet not widely read by the general public. These continue, for the most part, eclectic in the choice of their material, although a marked bias in favor of modernism is evident in the pages of two or three of our leading journals.

REGISTRATION

The registration and licensing of architects is a subject of general interest within the profession. A few States have had registration laws for many years, under which candidates for admission to the practice of architecture are required to present credentials of competence. Other States have followed slowly until at the moment registration laws are in effect in about two-thirds of the 48 States. The credentials of competence contemplated by these statutes supposedly provide an additional safeguard to the public.

MUSIC AND THE OPERA

By Catherine S. Bailey

Music Reviewer, *The Christian Science Monitor*

METROPOLITAN OPERA HOUSE

The record for the year 1937 at the Metropolitan in New York City was impressive. Director Edward Johnson, proceeding cautiously, achieved some real advances. Still keeping his number of operas mounted smaller than the number Gatti-Casazza used to achieve in those days of grimly mounting deficits which once threatened the very existence of the Metropolitan, he has managed to refurbish settings and costumes, to have some new sets made where they were needed, to keep its present superb eminence his roster of Wagnerian singers, to improve the orchestra by the gradual weeding out of those players whom he felt might well be replaced and by bringing in new musicians in their places who brought efficient musicianship as well as experience.

On Feb. 4, a brilliant performance of Rimsky-Korsakoff's "Coq d'Or" was mounted. This last opera of Rimsky's was set to Pushkin's sardonic poem, and the performance marked the hundredth anniversary of the death of the poet. Lily Pons sang and danced the part of the Queen, and Ezio Pinza did a richly comic King Dodon. So well received was this performance, that it was repeated a number of times before the end of the season to very large houses. The seventh week of the 1936–37 season saw Richard Hagemann's "Caponsacchi" finally reach performance after various delays. The cast included Chamlee, Tibbett and Cordon, Helen Jepson and Doris

Doe. The American ballet danced. The composer conducted.

Later in the season came the new mounting of Cimarosa's "Clandestine Marriage," done with style and finish. For this, the cast included Mmes. Dickson, Bodaya, Petria, and Messrs. Rasely, Huehn, and D'Angelo. Panizza conducted.

With Gina Cigna, on short leave from La Scala, "Norma" and "Gioconda" were mounted. Franca Somigli arrived in March and then Puccini was back in repertory.

The tour following the regular season in New York was tremendously successful. Cleveland has asked for a five-year contract to give the city one week each year of Metropolitan repertory. Elsewhere, houses were similarly sold out.

The spring season, intended primarily to give younger singers a chance for appearances and to produce a good proportion of opera in English, was directed by Lee Pattison. With Wilfred Pelletier as conductor, the season opened on May 3 and included a first performance of Walter Damrosch's "Man Without a Country," based on the Edward Everett Hale story, a revival of Rabaud's colorful "Marouf," and Thomas' "Mignon."

Mr. Johnson's announcements on his return from Europe in the fall included the names of new singers. Mme. Rosa Pauly, whose stunning performance in the concert version of Strauss's "Elektra" done with the Philharmonic-Symphony, drew much comment earlier in the year, was engaged to do this and other Strauss rôles at the Metropolitan. Zinka Milanov, engaged after she had fulfilled the conditions of learning three major Verdi rôles in Italian (she had never before sung in Italian) and of reducing 25 pounds, brings new abilities as do Gina Cigna and Carlo Tagliabue, an able baritone. With Miss Pauly in the concert performance of "Elektra" earlier in the year was the rich-voiced Enid Szantho also engaged for Strauss rôles. Carl Hartmann, dramatic tenor from the Munich Opera; Adolf Vogel, also from Munich; Nicola Moscona young Greek bass who has studied Italian rôles at Milan; Bruno Landi, a young Italian lyric tenor; Jan Kiepura, and Marita Farell, a lyric soprano from Czecho-Slovakia received contracts from the Metropolitan company. A new and able assistant conductor, Erich Leinsdorff, has also been engaged, primarily for work on French and Italian repertory.

Verdi's "Otello" with Martinelli and Tibbett, and Gounod's "Romeo and Juliet" with Crooks and Sayao were announced for revival. "Don Giovanni" came back to repertory, and "Barber of Seville" was brought out and dusted off as a vehicle for Lily Pons, whose miraculous, high notes and brilliant coloratura continue to thrill large audiences.

Damrosch's "Man Without a Country," presented in the spring season, was successful enough to move into the regular winter repertory. Gian Carlo-Menotti's "Amelia Goes to the Ball," mounted with gusto and style by the Curtis Institute of Music in Philadelphia on April 1 and in New York on April 11, has also been listed for the 1937–38 season.

OTHER OPERA IN NEW YORK

New York City had a good measure of opera even when the Metropolitan ended its season. The Curtis Institute brought Milhaud's "Le Pauvre Matelot" as well as Gian Carlo-Menotti's "Amelia al Ballo" on April 11. The WPA Federal Music Project mounted Pergolesi's "La Serva Padrona" and "The Romance of the Robot," music by Frederic Hart, book by Tillman Breiseth, on April 12. The Westchester Little Opera Company presented "Martha" on April 2. Alfredo Salmaggi at the Hippodrome produced Leoncavallo's "La Bohème" on April 16, and later did revivals of "Elisir d'Amore" and "La Favorita," as well as the regular repertory of his company. Earlier, during February, the Juilliard School had presented "Garrick," with music by Albert Stoessel and libretto by Robert A. Simon.

November brought a week of performances by the Salzburg Opera Guild which played at the Forty-

fourth Street Theatre, beginning Nov. 6. Their repertory included Mozart's "Cosi fan tutte," Monteverdi's "Coronation of Poppea" in an adaptation and instrumentation by Ernest Krenek, Rossini's first opera "La Cambiale di Matrimonio," and two one act operas, Milhaud's "Le Pauvre Matelot" and Jacques Ibert's "Angelique." The productions were acclaimed by public and critics alike. The ideal of the Guild is an operatic unit which is an art theatre, working primarily toward a perfectly integrated ensemble.

OPERA IN OTHER CITIES

Outside New York, a number of cities are fostering opera. The St. Louis Opera Company began its fifth season Nov. 22 in the opera house of the Municipal Auditorium with Erna Sack, Kirsten Flagstad, Feodor Chaliapin and Giovanni Martinelli engaged for leading rôles in "Rigoletto," "Faust," "Carmen" and "Tristan." Eighty St. Louis singers form the chorus, members of the St. Louis Orchestra, and advanced ballet pupils from the St. Louis dancing schools have a part in the performance.

New Orleans is undertaking fresh operatic ventures to revive the opera that flourished so long and so brilliantly in that city, which had the oldest operatic history in the country. Until 1919 when the opera house burned down, the social center of the city was the opera house.

The Chicago City Opera Company continued to mount occasional performances.

The San Francisco Opera Association is flourishing almost beyond belief, with three regular series and a tour which includes five performances at Los Angeles.

ORCHESTRAS

The Philharmonic-Symphony Society of New York has finally found a man on whom it could confer the title of regular appointed conductor. John Barbirolli, an Englishman, has been given a three-year contract, having left highly favorable impressions during his guest conductorship and appearing well qualified. On Oct. 28, Barbirolli conducted the first American performance of Bartok's Music for strings, percussion and celesta. Dec. 4 saw the first performance of Cadman's "Dark Dancers of the Mardi Gras."

The Philadelphia Orchestra, Leopold Stokowski, Eugene Ormandy, and Saul Caston, conductors, again made a transcontinental tour in the spring, going South, Southwest, to the Pacific Coast, to the Northwest, to Canada and the East. On the trip, the orchestra participated in the Ann Arbor Festival, May 12–15, and the Westchester County Festival, May 20–22. On tour, Ormandy, José Iturbi, and Charles O'Connell were the conductors.

The Boston Symphony Orchestra, continued under Serge Koussevitzky in his 14th year of conductorship in the regular series of concerts and tours which fill seven months in the year. In 1937 it branched out into that most ambitious of summer music festivals, the Berkshire Festival, detailed description of which will be found elsewhere.

Other orchestras, many of them large and of the finest musical calibre, continued to flourish under generous interest and patronage of the cities where they are located. The St. Louis Symphony Orchestra, Vladimir Golschmann, conductor, makes a tour of the South and Middle West which covers 28 cities. The Cincinnati Symphony Orchestra under Eugene Goosens included performances of Emerson Whithorne's Second Symphony and Edgar Stillman Kelley's new work, and went through a season interrupted by floods but completed afterward, so that no subscribers lost any concerts. In Milwaukee a Young People's Orchestra under Milton Rusch receives financial aid from the city. The Cleveland Orchestra, Artur Rodzinski, conductor, performed under the leadership of Stravinsky, Chavez, Enesco, Golschmann and Lange as guest conductors. Rachmaninoff and Albert Spalding were among a long list of soloists. The Indianapolis Symphony

Orchestra has given Fabien Sevitzky a three-year contract.

The Illinois Symphony Orchestra, the Chicago unit of the Federal Music Project, has given its audiences an impressive list of novelties in a series of 37 Sunday afternoon concerts. Two conductors, Izler Solomon and Albert Goldberg, worked together with the orchestra and its programs. The Kansas City Philharmonic Orchestra with Karl Krueger as conductor entered its fifth year. The Hartford Symphony Orchestra, Jacques Gordon, conductor, had a brief season of six concerts. The Reading (Penn.) Symphony Orchestra has Hans Kindler for conductor, although only 15 of its 75 members are professionals. The Chicago Symphony Orchestra, with Frederick Stock in his 33rd year as conductor, continued with its customary success through its long season. The New York Women's Symphony Orchestra, Antonia Brico, conductor, had its customary four concerts.

In Washington, the National Symphony Orchestra continued under the leadership of Hans Kindler who has been given a new three-year contract and gave 26 concerts in Washington, seven in Baltimore, five in Richmond and played at the American Music Festival of the National Federation of Music Clubs at Indianapolis, at which last city Dorati was guest conductor. One of the most interesting of the National Symphony programs was a joint one with Paul Whiteman on March 17 for an all American list of music. The Harrisburg Symphony Orchestra, George K. Raudenbush, conductor, entered its 8th season. The Rochester Philharmonic Orchestra did 10 concerts with Iturbi, two with G. F. Harrison, and its annual symposium of American music under Hanson. The University of Miami Orchestra under Arnold Volpe again did six concerts. The New Orleans Civic Symphony Orchestra, Arthur Zach, conductor, gave a series of monthly concerts. The New Jersey Symphony Orchestra, René Pollain, conductor, entered its fifteenth season.

A new first class symphony orchestra is being organized in Pittsburgh where from 1896 to 1910 a fine orchestra flourished. Now money has been raised by wealthy citizens and by popular subscription. Otto Klemperer has been engaged for six weeks and Chavez, Goosens, Reiner, Damrosch and Enesco for shorter periods. The Los Angeles Philharmonic under Otto Klemperer has a 24-week season, and the San Francisco Symphony Orchestra is being built by Pierre Monteux into a fine organization with excellent personnel and technical finish. This last orchestra receives $35,000 a year from city taxes.

Still other orchestras include the Birmingham Civic, Dorsey Whittington, conductor; Detroit, Franco Ghione, conductor through a five-month season; the Civic Symphony Orchestra of Denver, Horace Tureman, conductor; Seattle Symphony, Basil Cameron, conductor; New Haven Symphony, Richard Donovan, conductor; Duluth Symphony, Paul Lamey, conductor; Buffalo Philharmonic, Lajos Shuk, conductor; Houston Orchestra, Ernst Hoffman, conductor; the Baltimore Symphony Orchestra, Ernest Schelling, conductor; and the Winter Park, Florida, Orchestra, Alexander Bloch, conductor. The amazingly large number of orchestras over the entire country playing fine music before interested audiences is an interesting indication of the tremendous popularity and the flourishing condition of music in this country today.

YEHUDI MENUHIN

The two outstanding solo appearances of the year were made by Yehudi Menuhin, violinist, and Josef Hofmann, pianist. The violinist returned to his tremendous public at the age of twenty-one, after two years of seclusion from the concert stage for practice and study. The outstanding child prodigy of this generation has matured into an artist whose remarkable quality and achievement none may question. For his new public appearances on Dec. 6, 1937, he brought with him Schumann's posthumous violin concerto in D

minor. This work, its rediscovery and its performances, excited as much publicity as any piece of music has done in a decade. Written by Schumann during the last six months before insanity descended upon him, the concerto was written for and dedicated to the great violinist Joachim in 1853. For various reasons Joachim refused to give the concerto public performance. He felt that it did not represent Schumann at his best, and he had been discouraged by comments Schumann had made about his playing of it. At his death he left specific instructions that the manuscript was not to be released for publication until 100 years after Schumann's death. This would have been in 1956. The concerto, in photocopy, was sent to Menuhin from Germany with a request for his opinion of its worth. Enthusiastic about the music, Menuhin urged Streck, who had sent him the music, to get permission for its performance. When it was announced that Menuhin had received the rights of performance, an English violinist of considerable repute, Yelli d'Aranyi, grand-niece of Joachim, made a counter-claim to discovering it and to her rights of first performance, maintaining that she had received spiritualistic messages from Robert Schumann. Considerable excitement ensued in English as well as American papers.

As it turned out, neither Menuhin nor d'Aranyi did the world première. The German Government, waking up to the fact that it was losing a first performance of an important work by a German, decided that the concerto must not be played anywhere until after it had been played in Germany. The performance by a German violinist named Kulenkampf was short-waved to this country, after which Menuhin was free to perform the much discussed concerto in concert and with various orchestras.

JOSEF HOFMANN

Hofmann's concert, given in New York on Nov. 28 at the Metropolitan Opera House, was a Golden Jubilee concert, celebrating the fiftieth anniversary of his appearance in this country. The event was an imposing one. The Curtis Institute Orchestra under Fritz Reiner played. Brahms's Academic Festival Overture, Rubinstein's concerto in D minor for piano and orchestra, a group of Chopin pieces, in which music the pianist has always excelled, and a piece by Hofmann himself called Chromaticon, duologue for piano and orchestra, made up the program. Walter Damrosch spoke before an audience which included an amazing assemblage of the musical great of the nation.

SUMMER MUSIC

Musical activities no longer cease while musicians flock to Europe for the summer. Instead, the approach of summer seems merely to give impetus to a tremendous making of music. Opera companies, choral performances, symphony concerts, ballet performances, chamber music of every variety, and festivals make the summer season one of constant musical activity. Many schools of music run summer sessions, with distinguished teachers on the faculty.

FESTIVALS

The festivals of music which occur annually in themselves make a list of respectable proportions. This year, many new festivals took place. April 6 and 7 saw the tenth annual festival of the American Society of Ancient Instruments, with four subscription concerts. The Eastman School of Music held its annual festival of American music April 26–30, with five evening performances which included the usual American composers' concert, a Founder's Day concert, chamber music, band programs and ballet. Unusually fine programs featured the 1937 May Ann Arbor Festival which marked the centennial of the founding of the University of Michigan. The Philadelphia Orchestra and outstanding soloists joined with local choral bodies. The thirtieth Bach Bethlehem Festival was celebrated May 28 and 29 at Bethlehem under the direction of Bruce Carey, and included cantatas and chorales as well as the B minor mass. A Pan-American Festival of chamber music

sponsored by Elizabeth Sprague Coolidge took place July 13–24 in Mexico City, D.F., with an elaborate schedule for the six concerts of the series. The Worcester Music Festival, oldest in this country, was held Oct. 4–9 under the direction of Albert Stoessel, with oratorio, opera, symphonic and choral music on the varied programs.

The Berkshire Symphonic Festival had its fourth annual series of programs at Tanglewood, an estate near Lenox, Mass. in August. The six concerts took place Aug. 5, 7, 8, 12, 14 and 15, and included Beethoven, Wagner, and Brahms programs and three others with interesting and provocative music including E. B. Hill's "Sinfonietta." This festival is now held on property owned by the symphony orchestra, and Serge Koussevitzky seems well on the way to make the festival rank in importance and achievement with any of the European festivals.

Other festivals included a Mozart Festival at the Montclair, N.J. State Teachers College, May 23–25; an Arnold Schoenberg Festival at Denver, Colo., the week of Oct. 10, during which time Schoenberg's four quartets and his "Verklaerte Nacht" were performed, as well as works of other contemporaries; the Mountain Choir Festival, Mountain Lake Park, Md., July 18, when a large number of church choruses gathered to sing the Solesmes version of plain song in an effort to revive interest in the mediaeval church ritual; American Music Alliance, which observed a festival fortnight as a commemoration of its seventh anniversary; a Bach Festival at Rollins College; the fifth annual Bach Festival at Berea, O.; the National Folk Festival at Chicago, May 22–28, sponsored by the Adult Education Council of Chicago and thousands of individuals all over the country interested in the significance of this movement, with eight programs of folk music, songs and dances; the Westchester Festival, May 20–22, at White Plains, N.Y., under direction of Hugh Ross, with the Philadelphia Orchestra and 16 choral groups; the seventh annual American Folk Song Festival by the American Folk Song Society at Traipsin' Woman Cabin near Ashland, Boyd City, Ky; third annual Bach Festival at Carmel-by-the-Sea, Calif., July 19–25; the Stradivari Festival, an impressive list of concerts in Washington at the Library of Congress under the auspices of the Gertrude Clarke Whittall Foundation, using the quintet of Stradivari instruments presented to the Library of Congress by Mrs. Whittall for use, and marking this year the 200th anniversary of the death of Antonio Stradivari in Cremona; other concerts throughout the country sponsored by the Stradivarius Memorial Association, and inaugurated by one on Dec. 20 in New York City for which a number of distinguished performers and 18 Stradivari instruments were assembled; an American Spring Festival of Chamber Music, consisting of three concerts in the Fifth Avenue Galleries of the Grand Central Art Galleries given over to "pioneers of yesterday and today in American music and paintings," with an elaborate art exhibit set up especially for the concerts, the whole dedicated to Mrs. Elizabeth Sprague Coolidge.

RADIO

Fifteen years ago, the advent of radio seemed to spell the doom of concert hall music. However, the situation has so altered that radio is now the fairy godmother of good music and of sincere musicianship. Even composers are profiting by the advancing ideals of the best broadcasting studios. Late in 1936 the Columbia Broadcasting System appointed a composers' commission to write music specifically for the microphone. Aaron Copland, Louis Gruenberg, William Grant Still, Howard Hanson, Roy Harris and Walter Piston accepted membership on the commission. The NBC Artists Service secured recital appearances for 102 concert and operatic artists. More than $200,000 was the figure announced as the result of 610 engagements during 1937. The commercial sponsors are now backing advanced music, to a considerable extent at

least, and are buying the services of artists of repute.

The National Broadcasting Company itself is paying for the greatest broadcast of radio, a series of ten concerts planned and conducted by Arturo Toscanini, acknowledged the greatest living conductor. The orchestra given the maestro for the broadcasts has been assembled from the ranks of the finest available orchestral players, selected regardless of cost. This orchestra, independent of any advertising interests, is concentrating upon the cultivation of the best symphonic music.

Of course, there is still room for general improvement in the quality of the musical program as a whole. Much of the radio time is occupied by second rate music. The appearance on the radio of some really great artists is sometimes marred by the second rate musical "chestnuts" given these competent musicians to present. But so much advance has been achieved in the quality, technical and musical, of the broadcasts during the past five years that the prospects seem bright indeed for further and great progress.

FEDERAL MUSIC PROJECT

The mounting achievements of the Federal Music Project continue to impressive proportions. Serious musicians have been enabled to work out their ideas. Gifted composers have been given an enormous stimulus. And, most important of all, the American audience base has been tremendously enlarged. Great music has been made available to millions of people in every stratum of the diverse American society. These facts are from Dr. Sokoloff's report. More than 45 cities have regularly scheduled symphony programs. In 110 cities there are WPA orchestras. In 260 project units, music teachers carry free instruction to 500,000 persons unable to pay for lessons. Since October, 1935, approximately 2,500 folksongs and tunes have been gathered and transcribed by WPA Music Project workers in a dozen regions. Symphonic, choral and operatic music has been brought to hundreds of schools and institutions. Composers' Forum Laboratories are now operating in Boston, Philadelphia, Indianapolis, Chicago, Milwaukee, Tulsa, Los Angeles, and the University of Minnesota. Audiences for these laboratory projects have steadily increased from a handful to large and enthusiastic groups. The list of musicians who have moved on from these Federal projects to positions of responsibility in the professional world is the real answer to the charges of 'boondoggling' so often and so ignorantly hurled at what some serious thinkers feel to be the highest cultural force in America, actual and potential.

DEATHS

The year 1937 saw the passing of several outstanding figures in American music. Henry Hadley, energetic and fluent composer, known internationally for his conducting in many parts of the world and a member of a generation of musicians and composers who left a mark on the course of music in this country, died early in the year. Arthur Foote, of the same generation, composer of much good and interesting music, independent in his style of writing and in his musical outlook, passed away in April. Charles A. Ellis, first manager of the Boston Symphony Orchestra, died in May. He was a simple, unostentatious, devoted and gifted man, who built the orchestra to great heights with his friend, Major Higginson, who stood by Karl Muck when the vicious hatreds of the World War engulfed him, and whose managerial capacity was such that he was sought after by the most noted artists because of his acumen, far-sightedness, fair dealing and courtesy.

William J. Henderson died suddenly in June, ending a brilliant and historic period in American music criticism. With Philip Hale, H. E. Krehbiel, James Huneker, Richard Aldrich, Henry T. Finck, William Apthorp, and H. T. Parker, Henderson created a school of American music criticism which "stands high and apart from European practice in this field."

In George Gershwin's death, American music lost its most popular and its most appreciated figure, a composer whose genius, while not of scholarly quality, was none the less appreciated critically as well as popularly. Gershwin had attained tremendous success, writing at a time when metropolitan society was changing, ready to accept and appreciate new mediums in music as in the other arts. The loss of his indisputable talent, his gift to delight and entertain, is great indeed.

THE THEATRE

By John K. Hutchens

Drama Department, *The New York Times*

GENERAL

In 1937, as in the year before, Broadway continued on shorter rations than it usually enjoys. Producers still complained of the dearth of new scripts and the difficulty of competing with the salaries Hollywood pays to actors and writers. Also, the major film companies continued their agreement of 1936 not to finance legitimate theatrical productions, in protest against the Dramatists' Guild contract limiting their part in the sale of screen rights to plays. Still another retarding influence was the business recession, for the backing of many shows comes from Wall Street; October, 1937 hit an all-time low for Broadway production activity in that usually busy month.

Despite these factors, the percentage of hits seemed to be as high as, perhaps higher than, that of the preceding year. In other respects the Broadway of 1937 saw certain changes of tone and emphasis. The Theatre Union disappeared, leaving no group devoted entirely to the drama of social protest. The indications were that its place would be taken by other organizations, such as the new and successful Mercury Theatre, equally social-conscious and more competent theatrically. On Broadway proper the tendency was to a gentler, more emotional type of play, whether serious or comic.

Like other industries, the theatre was involved in reorganization along labor lines. The Associated Actors and Artistes of America, whose function hitherto had been merely to grant charters to the different actor unions, was scheduled to become a vast organization including all the craft and labor unions in the amusement industry. Frank Gillmore resigned as president of the Actors' Equity Association, a unit of the "A's," to become executive director of the newly aligned body. At the same time, Equity's dominance among the actor unions was challenged by the Screen Actors' Guild.

Hard-pressed though it was, however, the legitimate theatre twice took aggressive steps in 1937. With a unanimity rare in the profession, it successfully fought the Dunnigan Bill which would have granted the New York City License Commissioner drastic powers to revoke theatre licenses; the measure, which passed the Legislature without hearing, was vetoed by Governor Lehman. In the same co-operative spirit, leaders of all branches of the stage formed the American Theatre Council; its national convention in New York (May 24–27), attended by 400 delegates, discussed the problems of the theatre as a whole for the first time in the history of our stage. The most important single development of the convention was, perhaps, the announcement that John Golden, producer, would establish five scholarships for needy, promising playwrights. Such subsidies for dramatists had often been discussed but never before realized.

PRIZES

For its second award in as many years, the Drama Critics' Circle selected as the best American play of

the year a work by Maxwell Anderson which Guthrie McClintic had produced and directed with Burgess Meredith as leading player. This time it was "High Tor," a comic fantasy in blank verse wherein Mr. Anderson symbolized the contrast of new and old in American life by modern characters and the ghosts of early Dutch explorers of the Hudson River—a basic design not unlike that of "A Midsummer Night's Dream." Peggy Ashcroft, English actress, and Charles D. Brown headed the supporting cast of the play, which opened in January and ran until June 5.

The Pulitzer Prize for drama was won by "You Can't Take It with You," the Moss Hart–George S. Kaufman farce comedy presented in December, 1936 and described in this report for that year. The play was still running on Broadway as 1937 ended, and three road companies were touring the country with it. It was also produced in London.

NEW AMERICAN PLAYS

"Yes, My Darling Daughter."—In one of the pleasantest comedies of the year, Mark Reed told the story of the younger generation, seeking to experiment unconventionally with life, in conflict with the older generation which had conducted the same experiments but now viewed them with alarm. Leading players in this urbanely told tale were Lucile Watson, Peggy Conklin, Boyd Crawford and Nicholas Joy.

"Room Service."—The only successful straight farce of 1937 was this strident one about "shoestring" theatrical producers, by John P. Murray and Allen Boretz. Presented and staged by George Abbott, it was further proof of the latter's extraordinary gift of comic inventiveness, which in this case raised familiar plot material to a level of steady hilarity. It was acted with corresponding vigor by Sam Levene, Philip Loeb, Eddie Albert and others.

"Susan and God."—Rachel Crothers, whose success is unmatched among living woman playwrights, returned after a four-years' absence with a play typical of her craftsman-like approach to the theatre—that is, a comedy of character with a definite theme. Its basically serious story was of an insincere woman who adopts a popular religious movement as a plaything and discovers in time to save her husband, herself and their child that true religion comes from within. Gertrude Lawrence's spirited and virtuoso performance in the leading rôle was much acclaimed, and the play was a distinct hit.

"Golden Boy."—The reorganized Group Theatre took the field again with a Clifford Odets play which, though unlike any of his others, received almost unanimous critical favor, particularly for its author's sense of dynamic theatrical situation and gift for pungent dialogue. In the leading rôles of this tragic character study of a prize fighter seeking in the ring a vicarious outlet for his frustrated musical talent were Luther Adler and Frances Farmer, the latter coming from Hollywood to make her Broadway debut.

"Excursion."—Heretofore associated with the left wing theatre, Victor Wolfson turned to a fantastic comedy about a Coney Island boat captain who headed his craft out to sea in search of happiness. The device of assembling plausibly many types of persons in one setting was familiar, but thereafter the author distinguished his tale with wistful humor and genuine suspense. Unaccountably, it was not a decided success, despite the general praise accorded it and to its leading player, Whitford Kane.

"Of Mice and Men."—John Steinbeck's dramatization of his own novel (with some unofficial aid from George S. Kaufman) was the outstanding realistic play of the year. Directed by Mr. Kaufman, it translated into stage terms the grim power and swift tragedy of the original, the two leading rôles being superbly played by Wallace Ford and Broderick Crawford.

"Having Wonderful Time."—In this view of life in a Jewish summer vacation camp, Arthur Kober looked with kindly humor at the loves, hopes and manners of "hill-billies from the Bronx," and Marc Connelly, making

his first Broadway production as a manager, staged it in the same sympathetic vein. One principal, Jules Garfield, was borrowed from the Group Theatre; the other, Katherine Locke, attracted immediate recognition as one of the most promising of the younger actresses.

"The Star Wagon."—The Maxwell Anderson–Guthrie McClintic–Burgess Meredith team's contribution to the 1937–38 season was another success, albeit differing in type and style from its predecessors. Reverting to prose, Mr. Anderson employed the time machine around which to build a sentimental, warm drama which went back to the turn of the century and speculated on the fate of its characters had they taken different paths in life. Against amusing, colorful backgrounds by Jo Mielziner the principal rôles were acted by (in addition to Mr. Meredith) Lillian Gish, Mildred Natwick and Russel Collins in the interesting variety of styles and costumes called for by the action of the play.

"Father Malachy's Miracle."—Another of the year's gentle comedies was this dramatization by Brian Doherty of Bruce Marshall's novel of the same name—the story of the mild little priest who performed a miracle and of the complications which followed. Almost abandoned in rehearsal by Delos Chappell, it was successfully produced by him, with a resourceful performance in the leading rôle by Al Shean, a veteran of musical comedy.

Others.—"The Masque of Kings," by Maxwell Anderson, a Theatre Guild production of a poetic drama of the tragedy at Mayerling, with Henry Hull as Rudolph, Dudley Digges as Franz Joseph, Margo as Marie Vetsera; "Marching Song," a labor play by John Howard Lawson, the last production of the Theatre Union; "Miss Quis," a comedy-melodrama of small town life by Ward Morehouse and Peggy Wood, with the latter as star; "To Quito and Back," Ben Hecht's romantic melodrama of a South American revolution, with Sylvia Sidney, Leslie Banks and Joseph Buloff in leading rôles; "Too Many Heroes," a tumultuous drama by Dore Schary of a lynching; "The Ghost of Yankee Doodle," Sidney Howard's discussion of the plight of liberalism, which brought Ethel Barrymore from retirement to play the leading rôle for the Theatre Guild; "Barchester Towers," a "free adaptation" by Thomas Job of the Trollope novel, staged and produced by Guthrie McClintic, starring Ina Claire as the Countess Neroni; "No, You've Done It," a comedy by Mary Coyle Chase; "Blow Ye Winds," romance by Valentine Davies, with Henry Fonda and Doris Dalton; "Penny Wise," a light comedy by Jean Ferguson Black; "Fulton of Oak Falls," by George M. Cohan and Parker Fennelly, marking a reunion of the producer-actor team of Sam H. Harris and Mr. Cohan; "But for the Grace of God," a study of the relationship of poverty and crime, by Leopold Atlas; "Hitch Your Wagon!" by Bernard C. Shoenfeld, which, though a failure, contained excellent farce comedy acting by George Curzon, Dennie Moore and Joseph Greenwald and introduced a promising new director in Garson Kanin; "Edna His Wife," a dramatization in 11 scenes of the Margaret Ayer Barnes novel by Cornelia Otis Skinner, the diseuse, who played eight characters.

Some of these productions were moderate successes, but most of them were outright failures, proving once more that critical opinion and box-office response usually agree.

SHAKESPEAREAN REVIVALS

"King Richard II."—With five plays, Shakespeare was the most frequently produced dramatist of 1937. The success of Maurice Evans's subtle and eloquent portrait of the "skipping king" was the more extraordinary because the play had in modern times been deemed impossible to present effectively. (Its last professional production in New York was Edwin Booth's, in 1878.) Staged by Margaret Webster and with a strong supporting cast that included Augustin Duncan as John of Gaunt and Ian Keith as Bolingbroke, it played to packed houses for several months beginning in February. A return en-

gagement on Broadway in the Fall was followed by a road tour.

"Julius Caesar."—A surprise similar to that of "Richard" was afforded by the new Mercury Theatre group's production of "Caesar" in modern dress. Cut down to a story of swift action, and played without intermission or settings, it emerged as an exciting, sinister view of a modern dilemma: the place of the liberal (Brutus, played by Orson Welles) under a dictatorship (that of Caesar, acted by Joseph Holland). Offered at popular prices, it promised to stimulate the trend noted above — repertory presented by co-operative groups devoted to the theatre for its own sake.

"As You Like It."—Another new group, the Surry Players, made their Broadway debut with this pastoral comedy which they had previously acted on a Summer stage in Maine. Although the production was not a box-office success, the spirit and enthusiasm of the venture were hailed as promising, and praise was accorded the performances of Anne Revere as Celia, Shepperd Strudwick as Orlando and Katherine Emery as Rosalind.

"Antony and Cleopatra."—Not successfully presented in New York within living memory, this pageant-tragedy failed again, this time in an over-elaborate production starring Tallulah Bankhead. A consensus of critical opinion found Miss Bankhead untrained for Shakespearean acting and the version prepared by Prof. William Strunk Jr. undramatic.

"Othello."—Walter Huston, one of the ablest of American actors when playing modern drama, essayed a quietly spoken interpretation of the Moor. While respectfully received, his experiment was judged to be contrary to the nature of the play itself, an effect not lessened by Brian Aherne's highly theatricalized Iago. The production, which had been seen in the 1934 Summer festival at Central City, Col., was directed and designed by Robert Edmond Jones.

OTHER REVIVALS

"Candida."—In one of the finest performances of her career, Katharine Cornell played the heroine of Shaw's enduring play for the first time in New York since 1924. Her increased stature as an artist was the most notable feature of a production excellently staged by her husband, Guthrie McClintic, and designed by Jo Mielziner. As usual, the actress-manager's supporting cast was first-rate, with Kent Smith as Mr. Morrell, Robert Harris as Marchbanks, Mildred Natwick as Prossy.

Ibsen.—The once controversial "A Doll's House" was revived by Jed Harris, with Ruth Gordon as Nora, supported by Dennis King as Helmer, Paul Lukas as Dr. Rank and Sam Jaffe as Krogstad. It was generally agreed that the point of the play—woman's emancipation—was dated, and that the plot premises were no longer credible. If no longer acceptable from an intellectual viewpoint, however, it proved still successful as a vehicle for good acting. Miss Gordon's performance in particular was distinguished for its insight and emotional power. The production was first offered in July at Central City, Col. and had an extended tour before reaching Broadway.

Another Ibsen revival, "An Enemy of the People," found Walter Hampden in one of his most effective roles and the play itself a still powerful attack on middle-class complacency.

"Damaged Goods," etc.—"Damaged Goods," Brieux's now antiquated drama, in a new adaptation by John Pollock and Henry Herbert; "Abie's Irish Rose," Anne Nichols's long-run champion of the New York stage; "The Bat," by Mary Roberts Rinehart and Avery Hopwood, and "The Cat and the Canary," by John Willard. None of this once sensational quartet succeeded on its reappearance.

IMPORTED PLAYS

"Amphitryon 38."—Few new plays came across the Atlantic to repeat their foreign success on Broadway, the only one of hit proportions being Jean Giraudoux's "Amphitryon 38." As prepared for the American stage by S. N. Behrman, it was an ironic retelling of the infatuation of Jupiter for Alkmena, robustly played by Alfred Lunt and Lynn Fontanne

and gaily produced by the Theatre Guild.

From the Continent by way of London came "Storm Over Patsy," adapted by James Bridie from Bruno Frank's "Sturm im Wasserglass"; "Young Madame Conti," adapted by Hubert Griffith and Benn W. Levy from another Frank play and introducing Constance Cummings here as a serious emotional actress; "The Lady Has a Heart," another in the Viennese comedy tradition, this one adapted by Edward Barry Roberts from an original by Ladislaus Bus-Fekete, with Elissa Landi and Vincent Price. Miss Cummings reappeared with personal success in another failure, "Madame Bovary," a sixteen-scene adaptation by Mr. Levy of Gaston Baty's dramatization of the Flaubert novel.

England.—One play by an English author had its première here, Philip Howard's dramatization of the James Hilton novel, "And Now Good-bye," starring Philip Merivale in his now familiar rôle as a middle-aged gentleman ensnared in romance. Direct from the London stage were "The Amazing Dr. Clitterhouse," a comedy-melodrama by Barré Lyndon, starring Sir Cedric Hardwicke; "George and Margaret," by Gerald Savory, and "French Without Tears," by Terence Rattigan, both with all-English casts; "Wise Tomorrow," by Stephen Powys; "Young Mr. Disraeli," by Elswyth Thane (Mrs. William Beebe); "Love of Women," by Aimee and Philip Stuart, with additional dialogue by Gladys Hurlbut, featuring Heather Angel, Valerie Taylor and Hugh Sinclair.

The Abbey Players of Dublin returned for a repertory visit which included the old favorites and three new plays—"Katie Roche," by Teresa Deevy; "In the Train," by Hugh Hunt, and "The Silver Jubilee," by Gormac O'Daly. A revival of Lennox Robinson's "The Far-Off Hills" was the most popular offering of the engagement, which ran from Oct. 4 to Dec. 18.

SPECTACLE AND MUSIC

"The Eternal Road."—Many times postponed, the Max Reinhardt spectacle derived from the Torah and O Testament fables, opened finally one of the costliest and most pro gal pageants ever seen in the Ne York theatre. Designed by Norma Bel Geddes, set to music by Ku Weill and produced in the Reinhar tradition of ensemble acting, it cou scarcely have hoped for commerci success; but it was honored by pre and public for the magnificence ar reverence of its presentation. Lu wig Lewisohn adapted the origin libretto by Franz Werfel.

"I'd Rather Be Right."—Te years absent from the musical comed stage, George M. Cohan returned it as star of this satire on the Ne Deal by George S. Kaufman an Moss Hart (book), Richard Rodge (music) and Lorenz Hart (lyrics The satire was much gentler tha predicted, and the star's characteriz tion of President Roosevelt joine the Cohan gallery of warm and sym pathic portraits. Observers did n overlook the social significance of th production, whose counterpart wou have been allowed in few other cou tries in the world today.

"The Cradle Will Rock."—TH left-wing theatre's most impressiv contribution to 1937 was this militar operetta, entirely the work of Mar Blitzstein. Abandoned in July on th eve of production by the Feder Theatre Project, it was put on fo special Sunday night performances i December by the Mercury Theatr and was scheduled for a steady ru beginning early in January, 1938. It story of a steel magnate's unscrupu lous campaign against unionizatio was told without settings and cos tumes, but with caustic rhymes set t a satiric and skillful score. It wa hailed as the most effective working class theatre work since Clifford Odets's "Waiting for Lefty."

Other Shows with Music.—Afte devoting himself to radio for si years, Ed Wynn resumed his plac among the great clowns of the da in "Hooray for What!", by Russe Crouse, Howard Lindsay, E. Y. Har burg and Harold Arlen. "Babes i Arms" was a light-hearted musical b Rodgers and Hart, played almost en

tirely by a cast of juveniles featuring Mitzi Green, Duke McHale and Ray Heatherton. "Virginia," a lavish musical romance of colonial America by Owen Davis, Laurence Stallings and Arthur Schwartz, failed at the huge Center Theatre, whose future is now in some doubt—it seems impossible to present a show there whose speaking rôles are important. "Frederika," a romantic operetta, presented Dennis King as the young Goethe singing a Lehar score with Helen Gleason of grand opera. "Sea Legs" brought Dorothy Stone and Charles Collins amid music by Michael H. Cleary and book and lyrics by Arthur Swanstrom. "The Show Is On," the third edition of a production originally presented in 1936, had a brief return engagement before going on the road. Clare Kummer adapted for the American stage "Three Waltzes," a Viennese operetta with music by Johann Strauss elder and younger and Oscar Straus. "Pins and Needles," originally limited to Sunday evening performances, graduated to a regular run on the strength of its amusing satirical sketches and sprightly score; it was produced by the International Lady Garment Workers Union, which thereby took an important place among the co-operative theatre groups. "Between the Devil" starred Jack Buchanan, Evelyn Laye and Adele Dixon in an elaborate musical comedy by Howard Dietz and Arthur Schwartz.

THE FEDERAL THEATRE PROJECT

In the second full year of the WPA Federal Theatre Project, New York City was again the most active production center, despite national and local personnel cuts of 25 to 30 per cent in July. Of the 8,500 on the project rolls, 4,018 were employed in New York. Ninety-four professional productions were offered in New York City in 1937, of which 18 were marionette and ten vaudville shows. They gave 3,920 performances which were seen by approximately 3,635,000 persons. In keeping with the FTP policy of discovering new audiences, admission to many of these productions was free, including those of the Portable Theatre, whose attendance reached a new high of 2,000,000. The curtailment ordered in July discontinued project work in five States, leaving 22 on the list. However, two new departments, the National Service Bureau and the Play Department, were added, and the administration of the project as a whole was marked by greater efficiency and centralization.

In the Broadway area the FTP, while less active than it had been the preceding year, continued its policy of non-commercial experimentation. Its most important and successful productions there were "Doctor Faustus," a revival of the Marlowe play, staged and acted (title rôle) by Orson Welles; two one-act plays by Paul Green, "Hymn to the Rising Sun" and "Unto Such Glory"; "Processional," a revival of John Howard Lawson's expressionistic play (first produced by the Theatre Guild in 1925); "Power," an attack on the utilities companies, produced by the Living Newspaper unit in an exuberant style, employing symbols, loudspeakers, photography and music.

SUMMER THEATRES

The Summer theatre productions fell off to 361 from the total of 520 recorded in 1936, a decrease caused chiefly by the Actors' Equity Association's more stringent regulations regarding salaries and accomodations for players. The better known and more stable "straw hat" theatres were not affected, however, and continued as before to offer bills in which revivals of Broadway successes predominated. Noel's Coward's "Tonight at 8:30," comprising nine one-act plays, was most in favor, with fourteen productions, followed by "Boy Meets Girl," with seven productions. Seventy-three new plays were tested, of which only one, "Many Mansions," by Jules Eckert Goodman and Eckert Goodman, reached Broadway.

MOTION PICTURES

By Frank S. Nugent

Motion Picture Critic, *The New York Times*

GENERAL

This wouldn't be a report on the motion picture industry if it did not begin by saying that 1937 was the best year in its history. A few glum souls sighed as winter came and murmured something about the recession. There was a scurrying westward of East Coast executives, aghast in a mild way at the mounting cost of film production. There were minor shake-ups and major prophecies of dark days to come. The figure—as an onlooker sees it—is of a stout and well-filled old gentleman, tentatively taking a hitch in his belt and opining it would be wise to set something aside for a rainy day.

For Hollywood in 1937 was almost annoyingly prosperous. One company alone scheduled twenty-odd pictures at million-dollar budgets. In 1936 the total cost of Hollywood film production was $135,000,000. In 1937 the rough estimate placed it between $150,000,000 and $170,000,000. The box-office responded by admitting some 85,000,000 persons into the nation's theatres every week during the year. The theatres themselves became more numerous, swelled to 17,000 from the 16,421 which were in operation on Jan. 1, 1937. The cost of new theatre construction was $29,500,000.

Aside from the outlay, there was a drop in actual production. Quantitatively, Hollywood—and its sister producing citadels—was less generous, by about 125 feature-length or short films—1,311 in 1937 as against 1936's 1,446. But qualitatively, it had a better average. In face of the steady barrage of pictures fed into the double-bill houses—there was no diminution of this practice in 1937—one dare not say there were fewer Class B films. It might be admissible to report that many of the Class Bs had acquired a broad A. They offered somewhat more. Hence it was possible, looking genially over the year, to find at least one picture a week that was worth seeing, an average better, probably, than the theatre's. It made the annual selection of the "ten best" pictures of the year more onerous than usual and still more unfair.

Prosperity and serenity, of course, are not one and the same. Hollywood, while making money hand over fist, occasionally had its knuckles rapped. There was a strike. The censors were on the march. Producers were unhappy. Radio caused some static. Courts and legislatures were nasty about bank night and such. The Federal Government threatened to do a bit of trust-busting. Not even the silver jubilee of Paramount's white-haired dean, Adolph Zukor, nor the fifteenth anniversary of Will H. Hays as movie czar, were sufficiently happy events to hush the small clamors of the bouncing "infant industry."

THE LABOR FACTOR

May, if one was astrologically inclined, might have been reckoned the cinema's most active month. It was the month of the *Hindenburg* explosion, the Georgian coronation and the Chicago steel riot; it was the month of the Alexander Korda–Samuel Goldwyn deal for the purchase of United Artists; it was the month of the strike which had the world's reading public breathlessly wondering how Clark Gable and Shirley Temple would look on a picket line.

It started with the Federated Motion Picture Crafts, representing painters, boiler makers and other technical branches of the industry (14 unions in all), and spread to the Screen Actors Guild which was clamoring for recognition and a closed shop. Six of the unions affiliated with the FMPC withdrew and negotiated their own settlements. The Actors Guild, on the brink of a walkout, harkened to the producers,

gained recognition and sundry less intangible points, and returned to the fold. Federated Crafts bitterly snarled "sell-out," fought on and on, and settled sometime in June. Hollywood, as predicted in THE AMERICAN YEAR BOOK, 1936, had become strongly unionized in virtually every branch except those of the screen writer and the press agent. These rugged individualistic divisions fought within themselves, made little appreciable headway.

SINGLE VERSUS DOUBLE FEATURE SHOWS

More encouraging, and possibly of more direct interest to the laymen, was the modest progress made during 1937 to combat those twin freaks of the neighborhood picture house—the double bill and bank night.

Audience polls undertaken by various circuit, civic organizations and newspapers indicated a growing annoyance at the double-feature policy, but theatre operators replied that their patrons voted one way and reacted another: single-features, however augmented with shorts, did not exert the same potent box-office lure, they said. Undeterred and determined two Nutley (N.J.) men formed the Anti-Double Feature Society of America, picketed offending theatres and soon were deluged by applications for charters from other communities. The movement is spreading. Yet the Hays office reported that 60 per cent of the nation's theatres were operating on a double-bill policy.

BANK NIGHT AND OTHER MATTERS

Bank night and its variants, by which theatres set aside certain nights for the distrbution of cash, prizes or merchandise credits at stores, ran into legal obstacles from coast to coast. It was outlawed, as a violation of state lottery laws in California, Missouri, Connecticut, New Jersey, Kentucky, Georgia, Nebraska, Alabama, Iowa, Texas and Louisiana. Boston, Chicago, Philadelphia, Cleveland, Cincinnati and Detroit were among the cities which stopped it by ordinance or police action. A New York court decision supported it. The Loew's and RKO theatre circuits decided to abandon the practice, but reconsidered some months later. The problem remains unsolved. Audiences seem to be divided, some protesting the interruption of the film program, others favoring a chance to see Robert Taylor and win $100, too. (A submerged minority might argue $100 is not recompense enough.)

CENSORSHIP

Censorship virtually ceased to be a moral issue in 1937. The purity crusade of a few seasons back has cleaned the domestic screen until its whitewash is gleaming. The Legion of Decency, leader of the morality campaign, reported that, of the 1,271 feature pictures it reviewed between Feb., 1936 and Nov., 1937, only 13 had to be placed on the Class C (condemned) list. Seven of these were foreign-made; none of the remaining six was a major release. Of the 1,271 reviewed (1,043 American-made, 228 foreign) 780 received the Class A rating as "unobjectionable for general patronage; 380 were A2—"unobjectionable for adults"; 98 were Class B—"objectionable in part." Suicide, or divorce as a solution of problems were the elements responsible for most of the Class B ratings.

More vexing was political censorship, both domestic and foreign, but the year produced no such celebrated cases as the Sinclair Lewis–George Bernard Shaw affairs of 1936. Hollywood had learned its bitter lesson, tiptoed around such discordant topics as fascism, communism, labor trouble.

NEWSREELS

The newsreels, which cannot—by their very nature—divorce themselves so completely from reality, struck a snag when they recorded the Memorial Day strike-riot near the Republic Steel plant in Chicago when eight were killed, scores injured. On the instigation of the Chicago police who, in all objectivity, were most unfavorably shown, and because it feared release of the film might lead to further disorder, Paramount decided to shelve the footage. The La Follette Committee in Washington,

investigating labor matters, subpoenaed the print, a vivid description of its contents leaked out and a month later the reel was being shown to the public. But not to the Chicago public; police raided a Communist meeting and confiscated the film as it was being exhibited.

Speaking of newsreels, it might be well to review some of their other major accomplishments of the year—the terrible scenes of the explosion of the dirigible *Hindenburg* at Lakehurst, the coronation of George VI, and the pictures of the Japanese bombing of the gunboat *Panay*—probably the first time in history that a newsreel figured significantly in a major international incident. Nor can one overlook their admirable reporting of other phases of the Japanese invasion of China, or the civil war in Spain.

A lesser censorial skirmish in the newsreel field occured when the Kansas Censor Board deleted from a March of Time episode Senator Burton Wheeler's remarks in opposition to the Supreme Court reorganization plan, while permitting those of its supporters to stand. The Board "reconsidered" under pressure. The only other significant censorial cuts of the year, clearly inspired by fear of the Red bugaboo, were the actions of several State and local boards in banning "The Spanish Earth," "Spain in Flames" and other pro-Loyalist films of the Spanish war.

American films abroad fell afoul the usual serio-comic censorship. An innocuous musical film, "Born to Dance," was banned in Budapest because of its censor's belief that Eleanor Power's appearance on an American battlesship—being contrary to military discipline—might hurt our national prestige. Upon being assured our Navy Department was not that sensitive, the ban was removed. France, however, annoyed by its crime wave, cautiously cauterized a possible infection source and barred all gangster films. Japan banned "Mary of Scotland" as being inimical to the authority of the throne, tabooed "Mutiny on the Bounty" as too revolutionary. Italy, which was not recognizing England that month, refused to accept the coronation newsreels, banned the American-made "Charge of the Light Brigade," "Lives of a Bengal Lancer," "Clive of India" and "Lloyds of London" as British propaganda. Montreal spurned the year's prize film, "The Life of Emile Zola," the inference being that it was because Zola's books were on the prohibited index of the Roman Catholic Church. Germany, under Dr. Goebbels' nationalistic thumb, admitted a Ritz Brothers picture while avidly stifling every other trace of "non-Aryanism."

THE FILM OUTPUT

An analysis of 1937's film output shows there were about 600 American-made, about 313 foreign-made features released in this country during the year. By and large, the domestic pictures followed the same trends in evidence in 1936. Comedies still predominated, the accent being upon whimsy and, in several cases, outright lunacy. This cycle, begun in 1936 by "My Man Godfrey" and "Mr. Deeds Goes to Town," was advanced by such offerings as "I Met Him in Paris," "Double Wedding," "True Confession," "The Awful Truth," "Nothing Sacred" and others of less conspicuous merit. A smaller cycle, of which there were vague, premonitory rumblings in 1936, was the Hollywood cycle itself, a trend toward self-revelation tinged with the aura of glamour and a roseate complacence. "A Star Is Born" was Hollywood's most successful dramatization of itself. Other back-studio offerings were "Stand-In," "It Happened in Hollywood," "Hollywood Cowboy," "Super Sleuth."

BIOGRAPHICAL FILMS

Biography, encouraged by the previous year's success of "The Story of Louis Pasteur," was served with varying effectivness by a handful of pictures. Best of them, of course, was "Zola." Among the others were "The Plainsman," a romance involving "Buffalo Bill" Cody, Bill Hickok and Calamity Jane; "Parnell," an unsatisfactory portrait of the Irish leader; "The Great Garrick," a fictional farce adventure of David Gar-

rick; and—from abroad—the musically brilliant "Life and Loves of Beethoven," a colorful "Life of Lucrezia Borgia," a virile and robust (although clumsy) "Peter the First," and a few others. Behind these, and comprising the great bulk of the year's fare, were the melodramas, the musical comedies, the adaptations of plays and novels, a scattering of serious dramas.

SOCIAL AND DOCUMENTARY FILMS

There were occasional films of social implications—Mervyn Le Roy's "They Won't Forget," dealing with lynch law and intolerance; "Black Legion," an objective report on the hooded riders of the midwest; "Dead End" from the Sidney Kingsley play of the slums. Individually they were impressive; placed against the total production of the year, they constituted scarcely a pin prick of conscience. But there was compensation in the greater number of documentary films, inspired most of them by the Spanish or Chinese war, which preached the cause of peace and democracy. Others, like "Tsar to Lenin," were historically valuable, excellent pictorial footnotes to past and contemporary history. A common weakness was an editorial bias, of picture or commentary or both, which lessened the impact they might have had.

THE "TEN BEST" PICTURES

Still, from the hundreds of Hollywood-made pictures, ten-best lists could be—and had to be—prepared. *The New York Times* selected the following:

"The Life of Emile Zola," which has been mentioned before, was a brilliant biography, trenchantly written, superbly performed by Paul Muni. Its script was by Norman Reilly Raine, Heinz Herald and Geza Herczeg. It was directed by William Dieterle and produced by Warner Brothers.

"The Good Earth," a generous, spectacular yet poignant film of Pearl Buck's widely-read novel of China. It's principal players were Mr. Muni and Luise Rainer. It was directed by Sidney Franklin and produced by Metro-Goldwyn-Mayer.

"Stage Door," a witty, shrewdly-carpentered, deftly directed screen reworking of the vastly inferior play by George S. Kaufman. Its script was by Morrie Ryskind and Anthony Veiller, it was directed by Gregory La Cava, and its chief players were Katharine Hepburn, Ginger Rogers, Adolphe Menjou and Andrea Leeds. It was produced by RKO-Radio Pictures.

"Captains Courageous," based on the Kipling novel, was an excellently photographed and capitally played film of life among the Gloucester fisherman. Acting honors belong to Freddie Bartholomew, Spencer Tracy and Lional Barrymore. It was directed by Victor Fleming and produced by Metro-Goldwyn-Mayer.

"They Won't Forget," as noted before, was Mervyn Le Roy's unflinching indictment of lynch law, with a stubborn eye for the main theme and sentient direction to drive its message home. Claude Rains headed a little-known cast which bore its burden easily. It was produced by Warner Brothers.

"Make Way for Tomorrow," based on Josephine Lawrence's novel, *The Years Are So Long,* was the tragic story of an old couple thrown upon the resentful charity of their children and tragically unable to find a place for themselves. It was directed by Leo McCarey and movingly performed by Victor Moore and Beulah Bondi. It was produced by Paramount.

"I Met Him in Paris" narrowly won the title of being the merriest comedy of the year, for the field was crowded and there were several challengers. The screen play was by Claude Binyon; Wesley Ruggles directed; and Claudette Colbert, Melvyn Douglas and Robert Young were the starring trio. It was produced by Paramount.

"A Star Is Born," a Hollywood fable in rich Technicolor, was a sound, well-played, thoroughly entertaining film. Its principals were Janet Gaynor, Frederic March and Adolphe Menjou. It was directed by William Wellman and produced by Selznick International.

"Camille" earned its place only through Greta Garbo's magnificent performance of the classically tragic Marguerite Gautier. It was that performance which gave life and lustre to an old theatrical wheelhorse. It was directed by George Cukor and produced by Metro-Goldwyn-Mayer.

"Lost Horizon," last of the decalogue, was based on James Hilton's philosophic adventure tale and caught rather well the strange quality of the novel. It was another of the year's most interesting shows, with Ronald Colman, Thomas Mitchell and Isabel Jewel giving flawless performances. Frank Capra directed and produced it for Columbia Pictures.

NOTABLE PICTURES AND AWARDS

Among the foreign films, the *Times* nominated the French "Mayerling," the Swiss "The Eternal Mask," the English "The Woman Alone," the Russian "The Last Night" and "The Thirteen," then England's "Victoria the Great," "Baltic Deputy" or "Beethoven Concerto" (both Russian). Robert Flaherty's "Elephant Boy" (English), H. G. Wells's "The Man Who Could Work Miracles" (English) and the pre-censored version of "Club de Femmes" (French.)

The New York Film Critics, in their third annual balloting, voted "The Life of Emile Zola" the year's best picture; selected Paul Muni's Zola and Miss Garbo's Camille as the best performances of 1937. Their award for best direction went to Gregory La Cava for "Stage Door," and "Mayerling" was adjudged the finest foreign-language film. "Zola" also was rated the year's number one picture in the national poll of critics conducted by *Film Daily,* a trade paper, but the National Board of Review's Committee on Exceptional Photoplays thought the honor should go to "Night Must Fall," starring Robert Montgomery.

SCREEN PERSONALITIES

A few new faces appeared among the stars in 1937—but there was no great realignment of the major constellations. *Motion Picture Herald's* annual survey of box-office favorites found little Shirley Temple leading the list for the third successive year, not merely in this country but in staid old England. Clark Gable was second again. Robert Taylor, who was fourth in 1936, took third place. The team of Fred Astaire and Ginger Rogers, who used to be third, dropped to seventh. Gary Cooper, who stood tenth in 1936, rose to ninth place. Dropped from the top-ten list were Joe E. Brown, Dick Powell, Joan Crawford, Claudette Colbert and Jeanette MacDonald—all relegated by their fickle public to the second flight of ten. In their places on the 1937 scoreboard were Bing Crosby, fourth; William Powell, fifth; Jane Withers, another moppet, sixth; Sonja Henie, eighth, and Myrna Loy, tenth.

Miss Henie, former Olympic skating champion, should of course be included among the most successful "new faces" of 1937, with mention of Deanna Durban, Andrea Leeds, Jon Hall, Walter Winchell, and a host of foreign importations—new to Hollywood, if not to the screen—led by Danielle Darrieux, Fernand Gravet and Rose Stradner.

Possibly, too, before the subject of Awards for 1937 is completely forgotten, it might be well to recall that Harry M. Warner of Warner Brothers received the degree of Doctor of Humanities from Rollins College, Fla.; that Harry Lillis Crosby, better known as Bing, was honored with a Doctor of Philosophy from his alma mater, Gonzaga University, Spokane, Wash.

DEATHS

The death of Jean Harlow, platinum blonde comedienne, robbed the screen of one of its most colorful personalities. Other well-known players who died during 1937 were De Witt Jennings, Sir Guy Standing, Ross Alexander, Ruth Roland (star of the silent days), Colin Clive, Helen Burgess (a young and promising actress), Ted Healy (stentorian comedian), Ralph Ince (picture pioneer), Helen Lowell (character actress), T. Roy Barnes, Monroe Owsley, Paul Graetz, Frank Vosper, George Hassell, John Miltern, and J. J. McCarthy of the Hays office.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

ACADEMY OF MOTION PICTURE ARTS AND SCIENCES, Taft Building, Hollywood, Calif.

AMERICAN ACADEMY OF ARTS AND LETTERS, 633 West 155th St., New York City.

AMERICAN ACADEMY OF ARTS AND SCIENCES, 28 Newbury St., Boston, Mass.

AMERICAN ACADEMY IN ROME, 101 Park Ave., New York City.

AMERICAN CERAMIC SOCIETY, 2525 N. High St., Columbus, O.

AMERICAN FEDERATION OF ARTS, The Barr Bldg., Farragut Sq., Washington, D.C.

AMERICAN FINE ARTS SOCIETY, 215 W. 57th St., New York City.

AMERICAN INSTITUTE OF ARCHITECTS, 115 East 40th St., New York City.

AMERICAN NUMISMATIC SOCIETY, 156th St., and Broadway, New York City.

AMERICAN SCENIC AND HISTORIC PRESERVATION SOCIETY, 287 Convent Ave., New York City.

ARCHAEOLOGICAL INSTITUTE OF AMERICA, 125 Elm St., Oberlin, O.

ARCHITECTURAL LEAGUE OF NEW YORK, 115 E. 40th St., New York City.

ARTISTS GUILD, 480 Lexington Ave., New York City.

FINE ARTS FEDERATION OF NEW YORK, 115 East 40th St., New York City.

GRAPHIC ARTS BOARD OF TRADE, 291 Broadway, New York City.

HISPANIC SOCIETY OF AMERICA, THE, 156th St., West of Broadway, New York City.

MUNICIPAL ART SOCIETY OF NEW YORK, 119 E. 19th St., New York City.

NATIONAL ACADEMY OF DESIGN, 175 W. 109th St., New York City.

NATIONAL ALLIANCE OF ART & INDUSTRY, 30 Rockefeller Plaza, New York City.

NATIONAL ASSN. OF WOMEN PAINTERS AND SCULPTORS, 42 W. 57th St., New York City.

NATIONAL INSTITUTE OF ARTS AND LETTERS, 633 W. 155th St., New York City.

NATIONAL SCULPTURE SOCIETY, 115 E. 40th St., New York City.

NEW YORK SOCIETY OF ARCHITECTS, 101 Park Ave., New York City.

SOCIETY OF ILLUSTRATORS, 334½ West 24th St., New York City.

SOCIETY OF INDEPENDENT ARTISTS, INC., 148 West 72nd Street, New York City.

DRAMA

AMERICAN SOCIETY OF COMPOSERS, AUTHORS AND PUBLISHERS, 30 Rockefeller Plaza, New York City.

DRAMA LEAGUE OF NEW YORK, Hotel Woodstock, 127 West 43d St., New York City.

DRAMATIST GUILD, 9 East 38th St., New York City.

ENGLISH FOLK DANCE SOCIETY, 235 East 22d St., New York City.

EPISCOPAL ACTORS GUILD, 1 E. 29th St., New York City.

INTERNATIONAL THEATRICAL PLAY BUREAU, RCA Building, New York City.

MOTION PICTURE FOUNDATION OF THE U. S. OF AMERICA, 247 Park Ave., New York City.

MOTION PICTURE PRODUCERS AND DISTRIBUTORS OF AMERICA, INC., 28 W. 44th Street, New York City.

THEATRE GUILD, INC., 245 W. 52nd St., New York City.

MUSIC

AMERICAN GUILD OF ORGANISTS, 1270 Sixth Ave., New York City.

CANTORS REGISTRY, 95 St. Marks Place, New York City.

CHORUS EQUITY ASSN. OF AMERICA, 117 West 48th St., New York City.

GRAND OPERA CHORAL ALLIANCE, 276 West 43d St., New York City.

JEWISH THEATRICAL GUILD, 1560 Broadway, New York City.

NATIONAL BUREAU FOR THE ADVANCEMENT OF MUSIC, 45 W. 45th St., New York City.

NATIONAL MUSIC LEAGUE, 113 W. 57th St., New York City.

ORATORIO SOCIETY OF NEW YORK, 113 W. 57th St., New York City.

PHILARMONIC–SYMPHONY SOCIETY OF NEW YORK, 113 W. 57th St., New York City.

DIVISION XXVII

EDUCATION

ELEMENTARY EDUCATION

By Frank W. Hubbard

National Education Association of the United States

GENERAL

In elementary education during 1937 there were few events of headline proportions. Most developments during the year were only new manifestations of movements and trends of long standing. Generally speaking, elementary education continued to move toward pre-depression levels. New instructional materials replaced the ragged textbooks of the lean years. Essential services were restored. Teachers' salaries returned in many communities to the levels just prior to general budget slashing.

ENROLLMENTS

Reports of elementary school enrollments show a downward trend for the nation as a whole. This condition is clearly revealed in the 1937 publications of the Federal Office of Education. A review of the evidence shows that elementary school enrollments increased annually up to 1930. Between 1930 and 1932 school enrollment began to decrease although the total population was still increasing. Between 1932 and 1934 there was a decline of 2.5 per cent in the number of elementary school children. The continuation of the drop in recent years has led to the estimate that in 1940 the enrollment will be 5 per cent below that of 1930.

Further examination of the data shows that the decline in elementary school enrollment is most marked in the metropolitan areas. In these cities the birth rate has for years been less than that required to maintain a stationary population. Only in the rural areas, particularly the farming communities, does the proportion of young children to adults show a reproduction rate necessary to increase the population.

The trend in enrollment is a problem of considerable importance to educators and to citizens generally. Tax-dodgers are suggesting that the trend justifies a reduction in school budgets. The absurdity of this position is evident from two general facts: (1) the elementary school program has been in many communities only a minimum offering, many teachers being underpaid; and the increasing enrollment has for years made it impossible for communities to maintain the quality of buildings, equipment, and instructional materials; and (2) while elementary school enrollments are decreasing for the nation as a whole the enrollment in secondary schools, where per pupil costs are much higher, continues to increase. The relatively small and apparent decreasing need for funds at the elementary level is more than compensated for by the shortages and new demands listed above.

TEACHERS' SALARIES

In general the salaries of teachers were highest in the school year 1930–31. Thereafter, under the general economic distress, salaries began to decline until they reached their lowest point in 1934–35. The latest figures published for the school year 1936–37 show an upward trend to the averages prevailing in 1932–33. On the average, in cities of 2,500–

5,000 population, elementary school teachers received $1,008 for the year 1936–37. The corresponding median salaries for each city group were: 5,000–10,000 population, $1,150; 10,000–30,000 population, $1,297; 30,000–100,000 population, $1,501; and over 100,000 population, $2,027.

There are approximately 15,000 elementary school principals in city systems. Those giving all of their time to administrative and supervisory duties received $2,893 on the average during 1936–37. The average teaching principal in cities received $1,566.

PARENT EDUCATION

Most school systems today appreciate the value of helping parents better to understand the nature and needs of the young child. In many instances the program is provided through the activities of local parent-teacher associations. In other instances, as in Binghamton, New York, the school system employs a director of parent education. Usually these directors spend their time training lay leaders to conduct study groups of parents, preparing study outlines and other materials, and meeting with various lay and professional organizations operating in related fields.

A third means of parent education is the nursery schools. Schools organized under both public and private auspices have increased in number from about 76 in 1932 to at least four times that number in 1937. In addition there were nearly 2,000 units in the Federal emergency program directed jointly by WPA appointees and by state and local educators. These emergency units served about 75,000 children between two and five years of age. In many instances the programs of these schools include demonstrations for parent-education classes.

MENTAL TESTING

One of the significant achievements of 1937 in the field of mental testing was the publication of the revised edition of the Stanford-Binet tests of intelligence. These tests have been widely used in the schools and have been most useful to teachers in discovering the capacities of individual children. The revised form provides two scales permitting more frequent and accurate testing. Tests have been developed at the lower end of the scale permitting studies of development beginning at the two-year-old level.

VISUAL AIDS

The interest of educators in visual aids continues to be stimulated by various agencies. Motion picture films and equipment have steadily improved in effectiveness, increased in availability, and declined in cost. In New York City 628 WPA employees collected and produced models, pictographs, charts, maps, still pictures, slides, and films. Other similar projects were carried on in California, Colorado, Delaware, Indiana, Minnesota, and Wisconsin. Local school systems, such as San Diego County and San Antonio, arranged for the systematic preparation and distribution of visual materials. The state association of elementary school principals in New York issued a 160-page handbook on the use of visual aids in instruction.

The possibility of integrating films with the curriculum has been discussed in various publications (*e.g.,* Brunstetter's *How To Use the Educational Sound Film,* University of Chicago Press, and *Visualizing the Curriculum,* Cordon Co., New York). The National Bureau of Standards released a report on the care of film slides and motion picture films in libraries. The *Educational Film Catalog* and its supplements (H. W. Wilson Co., New York) has proved a useful guide in the selection of films. At Ohio State University there was held a conference of public school teachers actively interested in the production of films for classroom use. Other universities (*e.g.,* Alabama, California, Florida, and Michigan) extended their film libraries and increased their services to the schools through their extension divisions. The American Council on Education began the publication of a series of booklets on motion pictures in

education (*The Motion Picture in Education: Its Status and Needs* and *Teaching with Motion Pictures: A Handbook of Administrative Practice.*)

RADIO EDUCATION

Through its radio script exchange the Federal Office of Education has promoted activity in the field of radio education. During a single week 56 programs supplied by the Office were broadcast by 36 stations located in 26 States. The National Committee on Education by Radio issued a syllabus and bibliography for instructors of teacher-training courses in the school use of the radio. Publications of general use in radio instruction made their appearance during the year (*e.g.,* Abbot's *A Handbook of Radio Broadcasting,* McGraw-Hill, New York). The Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce, issued a 33-page bibliography on radio advertising, education by radio, amateur radio, and similar topics.

A number of school systems, including San Antonio, Texas; Newton, Massachusetts; and Alameda, California, have developed the use of the radio for instructional and public relations purposes. In Alameda, Calif., a full-time radio director prepares and stages programs under the general guidance of a committee of laymen and educators. Broadcasts are made daily as follows: Monday, "Great Moments from Literature"; Tuesday, "Exploring Nature's Secrets"; Wednesday, "California History"; Thursday, "Adventures of Brother Buzz" and "David and Susan in California"; and Friday, "United States History." So far as possible broadcasts are synchronized with classroom instruction.

INDIAN EDUCATION

In recent years a considerable advance has been made in introducing progressive methods into elementary schools for Indian children. These newer methods utilize much of the child's immediate environment and encourage each individual to express his own thoughts and feelings through writing, graphic arts, music, and construction activities. In a special number of *Indians at Work* (Office of Indian Affairs, Washington, D.C.) are set forth the results of modern education among Indian children. Through stories and pictures particularly pupils of many Indian schools have described tribal customs, dances, ceremonies, and their experiences in obtaining food. Books have been developed dealing with experiences close to Indian child life. There are indications that the Indian children learn more readily and with greater enthusiasm with these instructional materials. These results are similar to those obtained in schools for white children. Among the Navajos reports indicate that the schools are becoming community centers. The buildings are used now as clubs, amusement centers, libraries, sewing rooms, shops, and clinics. In order to stimulate the use of progressive methods among the teachers of Indian children summer school training has been offered at Pine Ridge, S.D.; Wingate, N.M.; and Sequovah, Okla. Demonstrations have been given in health education, arts and crafts, and other phases of the program.

KINDERGARTEN EDUCATION

In 1837 Froebel established the first institution which he called the kindergarten. In 1937 the schools throughout the United States celebrated the centennial of this milestone in educational progress. From the first kindergarten in the United States, established by Mrs. Carl Schurz in 1856, the movement has spread until today it influences approximately 1,000,000 children. In the large cities particularly the kindergarten is recognized as an integral part of the elementary school program. It has exerted widespread influence in inspiring teachers "to experiment, to observe, and to achieve an ever clearer understanding of the needs of children and a more successful practise in meeting them."

During 1937 the Association for Childhood Education was particularly active in focussing attention upon

the kindergarten movement. Among the important publications of the Association during the year were the following bulletins: *The Kindergarten Centennial, The Modern Kindergarten, Books for Young Children, Equipment and Supplies,* and *Foundations in Arithmetic.*

SOCIAL EDUCATION

Curriculum revision continues to occupy the time and energies of both teachers and experts. Statewide programs in Virginia, Texas, Michigan, and many other States are stimulating and guiding considerable local activity. A general analysis of what is going on has been presented in *The Changing Curriculum* (N.E.A. Department of Supervisors and Directors of Instruction and the Society for Curriculum Study).

No small part of the present activity is devoted to the social aspects of education. More and more children are being made aware of the nature and needs of the immediate environment and the constructive role of the individual in relation to his fellows. The N.E.A. Department of Supervisors and Directors of Instruction has issued a booklet (*Teachers and Co-operation*) containing suggestions on how teachers may experiment in developing skill in children in working together. Consideration of the general role of the teacher in bringing society and education closer together has received interesting treatment in *The Teacher and Society* (John Dewey Society).

Several years ago a committee of the National Education Association issued a statement on the social-economic goals of America. The statement has been widely used in teacher-training classes and in local study groups of teachers. During 1937 the committee suggested the changes in curriculums, methods, and administration which would be necessary to implement the first report (*Implications of Social-Economic Goals for Education*).

PUBLICATIONS

Each year there are published a number of important professional books and bulletins dealing with education at all levels. Many difficulties prevent any appraisal of the numerous useful textbooks and supplementary books which have been issued. General documents dealing with educational subjects may be more easily identified.

The importance of appraising the activities of the elementary school has long been recognized. However, suggestions on specific ways for doing so have been widely scattered in books on research and statistical method. During 1937 the Department of Elementary School Principals brought together an integrated summary in its yearbook *Appraising the Elementary School Program.* How best to interpret the purposes of education in a changing social order was dealt with in *The Improvement of Education; Its Interpretation for Democracy,* the 1937 yearbook of the Department of Superintendence (now the American Association of School Administrators). The instructional problems of dealing with propaganda have received elaborate treatment in *Education Against Propaganda,* published by the N.E.A. Department of Social Studies (National Council for the Social Studies).

The Educational Policies Commission (joint enterprise of the National Education Association and the American Association of School Administrators) issued two major reports in 1937. The first, *The Unique Function of Education in American Democracy,* was prepared in collaboration with the eminent historian Charles A. Beard. The second, *Research Memorandum on Education in the Depression,* was published by the Social Science Research Council. It is expected that these and other reports now being prepared will exert a significant influence in charting the course for educational progress in the United States.

Among the important reports of the Research Division of the National Education Association are the five issues of the *Research Bulletin* for 1937. These were: January, "Financing Public Education"; March, "Salaries of School Employees in 1936–37"; May, "Teacher Retirement

Systems and Social Security"; September, "Federal Support for Education; the Issues and the Facts"; and November, "Improving Social Studies Instruction."

The Federal Office of Education continues to publish a number of particularly helpful reports in many fields. Among these are the following: "Conservation in the Educational Program"; "Safety and Health Education of the School Child"; and "Public Affairs Pamphlets" (an index of material on social problems).

The need for a clearing-house for research is met in part, at least, by the issues of the *Review of Educational Research*, published by the American Educational Research Association. The 1937 issues have included the following: February, "Educational Sociology"; April, "The Curriculum"; June, "Teacher Personnel"; October, "School Organization"; and December, "Special Methods and Psychology of School Subjects."

SECONDARY EDUCATION

By Philip W. L. Cox

Professor, New York University

PUPIL ENROLLMENTS

The Federal Office of Education estimates that public high schools enrolled in September, 1937, 6,500,000 pupils, to which, for the purpose of estimating total enrollments in all secondary schools, would have to be added a considerable part of the 2,750,000 pupils estimated for other schools of various grades. Part of the slowing up in enrollment is due to the much better employment opportunities for youths at present than in past years; part is due to the decreasing elementary school enrollments caused by falling birth rates; and part is due to a temporary saturation point—the high school is approaching the limit of its ability to provide opportunities for the diverse youths of the nation. With little more than 60 per cent of the youths of secondary school ages as yet enrolled in high schools, however, it seems unlikely that secondary education, in some forms or others, has as yet nearly attained its final growth. New institutions may be required to attract and educate the fraction of youth not now included in high schools, but if so, they will doubtless be forthcoming.

HIGH SCHOOL ADJUSTMENTS

Within the secondary school as an institution the year 1937 was a period of adjustment. The changed economic situation began to decrease the enrollments of post-graduates and of older youths for whom scholastic education holds no charm. The hectic days of overcrowded schools, new problems calling almost daily for hastily inprovised adaptations—new pupils, new subjects, understaffed departments, administrative and educational maladjustments demanding immediate attention, and the rest—have not by any means passed. Fresh elements of confusion have, however, ceased generally to intrude themselves.

Some administrators who endeavored boldly to meet the challenges of great diversity of capacities, interests, and needs with such resources as they could command resigned or were dismissed. Many principals surrendered to what has seemed to them to be inevitable compromises if they are to retain their positions.

Positive principals, nevertheless, persisted in attempting to consolidate and organize their innovations within the framework of a modified school. Subject departments have been co-ordinated and their functions recast; curricula and courses of study have been fused, correlated, broadened, and integrated with a view to the characteristics and qualifications of the pupils and teachers who are or who may be concerned with them. Pupil-advisement and ad-

justment are developed in harmony with these curricular and institutional modifications, opportunities, and restrictions.

The results of these conditions were apparent in the juxtaposition of several outstanding events and programs that received major attention in professional meetings and in published books and articles, both general and educational, during the year. Moreover, significant legislative enactments and governmental policies similarly reflected the maturing practices in secondary schools.

PLATFORMS AND PROGRAMS

The professional organization that is closest to the administrative problems of the public high school is the Department of Secondary School Principals of the National Education Association. In February, 1936 the Committee on the Orientation of Secondary Education published its final report on "Issues." In February, 1937, this committee followed up its more philosophical discussion with the presentation of nine "Functions of Secondary Education," each one elaborated and some of its implications set forth. Throughout the report there is recognition of the newer practices and criteria which are quite independently and almost inescapably finding acceptance and application in representative schools.

At the same time the Department of Superintendence of the National Education Association (hereafter named the American Association of School Administrators) published their noteworthy fifteenth yearbook: *The Improvement of Education: Its Interpretation for Democracy.* Part II of this yearbook is entitled *The Educational Responsibility* and presents a "Long Term Program of Educational Improvement" together with some of the basic demands to which such a program is the response and the conditions of public enlightenment that must accompany it. While the yearbook deals with the entire public school problem, its program, so far as it relates to the high school, accords with the changing practices and attitudes forced on school administrators by the social crisis.

In his monograph, *Secondary Education for Youth of Modern America,* prepared for the American Youth Commission of the American Council in Education, Harl R. Douglass expounds the situation involving the high school and the other functioning agencies of adolescent education —occupations, the C.C.C. Camps, and numerous health, recreation and cultural opportunities—and recommends their co-ordination in a more permanent alliance.

The Educational Policies Commission of the National Education Association has issued a penetrating preliminary report entitled *The Unique Function of Education in American Democracy.* In this book the dependence of educational philosophies and programs upon the spirit of the ages in which they dominated is stressed and some of the adaptations of educational policies to the present circumstances are set forth. These adaptations prove to be the very ones that are at present being undertaken more or less effectively by the more vigorous and positive secondary school administrators and their colleagues.

Nationally there has been vigorous agitation for direct Federal aid to be distributed to the States for the support of general education, conforming to the assistance extended for vocational education. The assertion of national interest in civic, cultural, and physical education is justified, say the supporters of the Harrison-Fletcher Bill (not yet enacted), largely because the changing economy of America requires that schools undertake a far more generous direction of all youths and for much longer terms than has in the past been customary. Such control of youth is in the national interest, they assert. In the non-industrial States such a broad program, however, cannot be financed without Federal intervention. The emergency educational program of youths now conducted under the auspices of the W.P.A., C.C.C., and N.Y.A., might thus be gradually replaced by a more permanent and better co-ordinated program. With the

encouragement of the Federal Office of Education and of aggressive state departments of education, such coordination is even now being undertaken experimentally in selected high schools.

Finally, the Progressive Education Association, the Society for the Study of the Curriculum, and many other national and state educational organizations published books, reports, and instructional materials during 1937 which similarly conform to the emerging policies and practices of public schools. Among such reports and books may be mentioned *The Changing Curriculum,* the joint yearbook of the Department of Supervisors and Directors of Instruction of the National Education Association and the Society for Curriculum Study; *The Teacher and Society,* the first yearbook of the John Dewey Society; the section on Secondary Education prepared by Dr. George M. Wiley for the thirty-second annual report of the State Education Department of New York; the mimeographed reports and curriculum materials of the Curriculum Commission and the Human Relations Commission of the Progressive Education Association.

EDUCATIONAL LEGISLATION

Precautionary and Restrictive Laws.—Not alone are educational organizations and school leaders realizing the need for vigorous modification of institutional practices. Federal and State and municipal governments and the many civic and economic pressure groups to which legislatures and executives respond are also aware that social crisis is reflected in school processes. On the negative side, this recognition has in the recent past caused the adoption of such precautionary and restrictive laws as those forbidding the teaching of communism, those requiring "loyalty oaths" of teachers and flag salutes and pledges of allegiance by children, and in one State even the compulsory painting of school buses in red, white, and blue! While the agitation for formal repeal of such legislation has as yet been generally unsuccessful, the wave of hysteria that supported its adoption has to a great extent subsided. The most dramatic evidence of this change of sentiment was the repeal last June of the so-called "Red Rider" which had been appended to the Appropriation Act for the Public Schools of the District of Columbia (1935) forbidding the payment of salaries from the funds provided to persons teaching or advocating communism.

Tax Distribution.—On the positive side, however, the advance is marked. Much of the recent educational legislation is merely incident to a trend that has characterized the past decade or more. New forms of taxation tend to replace or supplement the property tax—income taxes, sales taxes, business taxes—levied by the State and a part of the proceeds distributed to the school districts; the purpose of such legislation has been both more nearly to equalize educational opportunities in rich and poor districts and to compel other forms of wealth than real estate to contribute more adequately to the support of public services including education.

State Control or leadership has been more vigorously asserted in the areas of school organization, curriculum, and teacher certification; while many errors accompany such assertion, it has doubtless tended to overcome local inertia and political jobbery within the school districts. To what extent secondary school teachers and practices which result from such State interventions will prove superior to those selected and developed through freer local experience and preference is not predictable.

Free Text Books.—The provision of textbooks at public expense has been extended by permissive and mandatory legislation in some States, an acceleration of an inevitable trend resulting directly from the depression.

Compulsory Attendance.—A general development has been in the regulations affecting compulsory attendance and the requirements for labor permits resulting in more stringent administration of the laws

and, hence, in the stabilization of high school enrollments.

Extra-Mural Activities.—The extension of educational opportunities for pupils to institutions and areas outside the school grounds but under school auspices has long been generally agitated and somewhat gingerly practiced. One very important deterrent has been the lag in legal processes whereby teachers assigned by the principal to accompany groups of pupils on such official trips might be held individually responsible for any real or fictitious injury that any pupil claimed to have sustained in connection with the extra-mural activity. In 1937, legislation was enacted in New York State definitely designating the local boards of education to be responsible for any damages chargeable because of negligence against an employee provided he is acting within the scope of his authority. If and as other States pass similar legislation the curricular and co-curricular practices of the secondary school should be greatly enriched.

Teacher Pensions.—Pension and tenure systems for teachers have been newly made mandatory in some States and in others extended to school districts which had heretofore been exempt. Such legislation reflects the general community support for many forms of economic security; in the case of public education, it has been aroused and focused by aggressive teachers' organizations.

School District Consolidations.—Considerable progress has been made in the encouragement of consolidation of village and rural school districts, especially in New York State, with resulting centralized high schools, staffed and equipped to provide much broader and more adequate educational and recreational opportunities than the smaller units could offer. If the long depression is now actually receding into the past, it is probable that State legislation and departments of education will move more vigorously to accelerate this tendency toward consolidation.

A somewhat related trend toward consolidation or better co-ordination of all State-supported or subsidized institutions of higher education has been accentuated by the economic situation. Such a tendency affects secondary education indirectly because it systematizes and somewhat restricts the opportunities for advanced education in the vicinity of many local high schools.

George-Deen Act.—The National Government has ventured vigorously into a new area of vocational education. The George-Deen Act, operative July 1, 1937, increases the Federal subsidies for education in trade and industry, and provides $1,200,000 annually for vocational education in the distributive occupations—retailing, wholesaling, jobbing, commission buying and selling, etc. Here again is evident a somewhat belated recognition of the implications of a changing social economy. For a quarter-century pioneering schools have offered instruction in salesmanship, in marketing, and in consumer economics. But progress has been slow. Great stimulation to these fields of study and practice may now be anticipated.

Social Security.—In carrying out the provisions of the Federal Social Security Act for vocational rehabilitation of the physically handicapped, the State Department of Education of New York is charged with the duty of providing the educational and financial aid required.

Federal Co-operation.—The present and proposed Federal relationships to education is the subject of inquiry by the Advisory Committee on Education appointed by President Roosevelt in September, 1936. The committee's report is expected to propose some orderly co-ordination of the many and diverse instrumentalities now concerned with Federal interventions in education at all levels. Of special interest to those concerned with secondary education are the Federal provisions for vocational education, agricultural extension work, emergency aid to many rural areas in which schools were closed during the depression, construction and repair of school buildings through P.W.A. and W.P.A. allotments, partial support of thousands of high

school students through N.Y.A. funds, educational and health programs for youths enrolled in the C.C.C., and employment of teachers to render supplemented services in day and evening high schools under the W.P.A. It will take into account also the implications of pending legislation: the Harrison-Black-Fletcher Bill authorizing annual appropriations beginning at $10,000,000 and increasing to $300,000,000 to aid States to provide more adequate programs of education; the Randolph bill to appropriate $2,200,000 annually for adult civic education; the Clason bill establishing a Youth Service Division in the Federal Office of Education; the Thomas bill to set up a national system of supervised correspondence study; the McAdoo bill to subsidize State programs of adult education; and other proposed legislation to provide Federal aid for the education of crippled children, conservation education, public libraries, and other measures that would more or less directly affect secondary education.

EXPANSION IN SCHOOL PRACTICES

In terms of school organization there is not much that can be reported with certainty. As noted in this section in previous years, the extraordinary growth of high school enrollments since 1930 together with the decrease of new school building construction resulted in many necessary adaptations—perhaps perversions—of grade grouping. In some places six-year secondary schools become five-year or four-year schools. In others, ninth grades were removed from four-year high schools and combined in elementary school centers. In still others schools were redistricted so that only those pupils in the immediate neighborhood attended the seventh and eighth grades of the Junior high school.

Nevertheless, the trend toward reorganization on the 6–3–3 or 6–6 basis, however retarded, has continued. Jessen presents the following data and comments on them as follows:

NUMBER AND TYPES OF REORGANIZED SCHOOL BY 4-YEAR PERIODS, 1922–34

Type of School	1922	1926	1930	1934
Junior	387	1,127	1,842	1,948
Senior	91	414	648	755
Junior-Senior and undivided	1,088	2,003	3,287	3,936
TOTAL	1,566	3,544	5,777	6,639

"Nearly three-fifths of the reorganized schools reporting in 1934 were junior-senior or undivided schools. Their number was about twice that of the junior high schools although the enrollments of pupils were about equal in the two kinds of schools; in other words, the typical junior-senior school was approximately half the size of the typical junior high school. The number of senior high schools was much lower, only about one-ninth of the total. It is to be noted that the rate of increase in junior-senior and senior high schools has been more rapid than the increase in junior high schools since 1926, and especially since 1930.

"Attention is invited to the dominant prevalence of 3-year schools and their counterpart, the 3–3 and 6-year schools, among the junior-senior and undivided types. Three of every four of the reorganized schools follow one or another of the patterns mentioned. Nine of every ten of the undivided schools are of the 6-year type and four of every five of the segregated junior and senior schools are developed on the 3-grade plan. Only among the junior-senior schools does one find any considerable number of deviates from the standard patterns; here 43 per cent of the schools are organized on the 2–4 unit.

"With such a predominance of one style of grade organization one may well ask oneself if the movement toward reorganization is in danger of itself becoming standardized. Is a school system which undergoes reorganization likely to shift merely from one kind of standardized pattern to another? The situation, so far as

assignment of grades to the units of reorganized schools is concerned, seems to suggest that such is the case. One needs to bear in mind, however, that the characteristics of schools are determined by many factors aside from grades included. Moreover, even if one views the matter purely from the standpoint of grades assigned to each unit, there are significant variations from the 3-year and 6-year patterns. In Table 2 are shown 23 types of grade organization within reorganized schools. Surely this should be enough variety to suit the most enthusiastic opponent of standardization. In addition, there are various alinements and relationships among units which are not shown in the table."[1]

With the current increase in new school construction, with or without P.W.A. funds, it seems probable that the forward progress of the reorganized high school may be more rapid.

Meantime the number of students pursuing their work beyond high school in public and private junior colleges has increased very rapidly during the present decade. To provide for their diverse needs the curriculum modifications have been varied and somewhat radical.

"The problem of terminal courses, principally of semi-professional character, is one which is occupying the attention of leaders in the junior-college movement at the present time. A committee of the Carnegie Foundation for the Advancement of Teaching, after a study of junior colleges in California in 1932, recommended three such curriculums to take their place beside the preacademic and preprofessional curriculums usually found. These three were (1) curriculum for social intelligence intended to train for social citizenship in American civilization, (2) a series of specialized vocational curriculums for those "who will soon terminate their schooling to enter the occupations," and (3) an adult education curriculum for those now out of school. It is to be noted that in California probably more extensively than anywhere else has the idea of terminal curriculums in the junior college found its way into practice."[2]

OTHER SUPPLEMENTATIONS OF HIGH SCHOOL EDUCATION

An empirical adaptation of junior college opportunities—not at all new in secondary schools—has been the provision for post-graduate students. During the depression such enrollments increased very rapidly, both because of the lack of employment opportunities for high school graduates and because parents in many cases were unable to support their children away at college. In the nation as a whole there were about 60,000 postgraduates enrolled in high schools. Data for the current year are not available. Individual schools, however, report an expected decrease in the numbers of such students for the fall term of 1937.

In night schools, part-time schools and correspondence instruction at secondary school level, compensating conditions have been in evidence. Enrollments for part-time general education in night schools and continuation schools naturally decreased after 1930 since both depended to large extent on employment. In vocational schools, however, part-time instruction has increased throughout the depression.

In twelve States, official recognition is given to supervised correspondence study, and 18 other States and a number of agencies natural in scope have encouraged such study. Unfortunately enrollment data are not available.

The educational facilities of C.C.C. camps and the work projects of the N.Y.A. are potentially of utmost importance as aspects of secondary education. The youths engaged in these projects are concerned with socially useful work, with voluntary educational activities, and with co-operative endeavors which provide the means and the occasions for such ac-

[1] Carl A. Jessen, *Trends in Secondary Education*, Chapter II of Volume I of Biennial Survey of Education in the U.S. 1935-36. Bulletin, 1937, No. 2 page 8.

[2] *Ibid.*, page 13.

tivities. High school laboratories, studios, and shops are in many cases made available for C.C.C. boys; high school instructors occasionally give voluntary service to instructing these boys at the request of the Camp's educational advisers.

CURRICULUM INNOVATIONS IN THE HIGH SCHOOL

The movement toward a functional curriculum in the high school is at least a half century old. Tradition and inertia have made progress slow and uncertain. What has been gained in one place or at one time is largely offset by retrogression at other places and periods. Nevertheless, the challenge of new conceptions, new pupil-types, and new ideologies during the years of the depression has resulted in great numbers of promising innovations. During 1937, the writer has found accounts of nearly 50 such developments in such educational magazines as the *Clearing House, School Review, High Points in the Work of the High Schools of New York City,* the *California Journal of Secondary Education,* the *North Central Quarterly,* and *School Life.*

One of the most sweeping readjustments which exemplifies the spirit of many of the others is here summarized. A. S. Cakebread, Principal of Greenville, California High School reports the readjustments in that school. College domination was largely liquidated below the eleventh grade. The curriculum was divided into four main divisions: essential tools of learning; practical arts; fine arts; and health and recreation. Study hall was eliminated; each room built up its own library. All so-called extra-curricular activities were merged with the new curriculum. Homogeneous grouping among the English classes replaced conventional grades. The new curriculum emphasizes practical arts, and is based on constant contact with pupils' homes; the teachers deliver report cards at the homes of the pupils and confer with parents regarding their meanings. Correspondence study in agriculture, household, chemistry, silhouette photography, orchestras and bands, etiquette and the conduct of parties, motion pictures taken of school activities by pupils, the provision of hot lunches prepared by pupils, and community adult night classes are all parts of the vigorous program.

COLLEGIATE EDUCATION

By Archie MacInnes Palmer

Executive Secretary, Cornellian Council of Cornell University

GENERAL

A survey of the significant developments in the field of collegiate education during 1937 clearly indicates the abiding faith of American youth in the value of education beyond the secondary school level. The function of the college or university was well expressed by Edmund Ezra Day, the new president of Cornell University, in his inaugural address, when he said that it "may well undertake to energize among its students certain impulses that in the long run profoundly affect individual character. Ideals of self-respect, of self-development, of self-directed individual responsibility should be inculcated by all available means. The love of truth and of beauty in all their forms should be fostered at every opportunity. A sense of social obligation should be induced. The time has passed when it can be assumed that social well-being will flow automatically from self-interested individual enterprise. If democratic institutions are to be preserved and individual liberty remain our proud possession, the citizen must recognize his obligation to make his life add to the common weal."

The virility of higher education in this country is manifested by the

courageous manner in which the colleges have faced the economic and social challenge of the past few years. Instead of succumbing to the overwhelming drain upon their resources, they have continued to improve their facilities and their curriculum to cope with the demands placed upon them. During the past year two new colleges were established: George Pepperdine College in California and Queens College in New York; new schools, particularly in the social and applied sciences, have been organized; and the offerings of existing institutions expanded and modified in response to current needs.

STUDENT ENROLLMENT

A continued increase in student enrollment in the American colleges and universities, although not as marked as in previous years, was recorded during 1937. According to Raymond Walters, in his annual report on college and university registration (*School and Society,* Dec. 18, 1937), there was an increase of 3.6 per cent over 1936 in the number of full-time students attending approved colleges and universities of the United States. Reports received from 602 institutions showed an aggregate of 781,038 full-time students and a grand total (including part-time and summer-school registration) of 1,200,905 resident students; this latter was an increase of 4 per cent over 1936. The corresponding increases for 1936 over 1935 had been 6.5 per cent and 7.3 per cent respectively. Many institutions, particularly larger universities, both endowed and under public control, reported all-time highs in their enrollment during 1937.

Of 593 institutions which reported both for 1937 and for the previous year 57 universities under public control had 10,735 more full-time students than in 1936, or 4.3 per cent increase (as compared with 8.7 per cent increase in this group for 1936 over 1935); 50 universities under private control had 4,857 more full-time students than in 1936, or 2.7 per cent (as compared with 2.9 per cent for 1936 over 1935); 372 separate colleges of arts and sciences had 4,462 more students, or 2.2 per cent increase (as compared with 4.4 per cent increase for 1936 over 1935); 49 technological schools had 6,250 more students, or 8.5 per cent increase (as compared with 11.3 per cent for 1936 over 1935); and 65 teachers colleges had 501 more students, or 0.9 per cent (as compared with 2.7 per cent for 1936 over 1935).

The figures on freshman enrollment indicated a very definite decline in the liberal arts, despite the fact that a majority of those entering American colleges continue to take general training, many to qualify for later admission into medical, law, and other professional schools. The trend is strongly toward courses in commerce or business administration, both in the separate colleges of arts and science offering commerce courses and in universities, private as well as public.

Doak S. Campbell reports (*Junior College Journal,* Jan. 1938) a continued growth in student enrollment in the junior colleges of the country. The number of such institutions increased from 528 in 1936 to 553 in 1937, and the enrollment from 129,106 to 136,623, a significant increase of 5.8 per cent as compared with 5.6 per cent the previous year. Since 1928 there has been an increase of 36 per cent in the number of junior colleges and 170 per cent in the enrollment. Those under public control, representing 44 per cent of the entire group, enrolled 93,578 students, or 68 per cent of the total, as compared with 43,045 students, or 32 per cent, in the privately controlled institutions.

Statistics gathered by the Committee on Friendly Relations Among Foreign Students indicate that 97 different countries and territories were represented in 1937 in the colleges and universities of the United States by a total of nearly 9,000 students. The largest number of any one nationality or race is Chinese—2,162. Every country of Europe is represented, Germany leading with 245, and England second with 232. The total registration of students from

Latin American countries is 1,200; Cuba, Puerto Rico, and Mexico lead with 340, 331, and 209 respectively. Very few students are coming from Soviet Russia, but Turkey has sent 82, Siam 22, and Afghanistan 8.

Within the State of California we find the largest number of these "unofficial ambassadors of goodwill," 1,906, 735 of them American-born Orientals. There are 898 in New York, 612 in Massachusetts, and 524 in Washington, 227 of them American-born Orientals; Illinois, Michigan, and Pennsylvania register 405, 326, and 379 respectively. Engineering claims the interest of a majority, while education, including physical training, holds second place in popularity, except among the Chinese, with whom business and economics courses are second choice. Next in order come medical sciences, liberal arts, general science, business and banking, economics and political science.

EDUCATIONAL TRENDS

There has been growing concern among educational leaders over changing student interest in the various aspects of the college curriculum and its effect upon the concept of a liberal education and the status of the liberal arts college within a university and of the humanities within the liberal arts college itself. Partly as a result of social and economic conditions there has been a decided shift in student enrollment toward the more practical subjects, including the vocational. In his annual report last year President Butler of Columbia commented on the current eclipse of the liberal tradition and the deplorable results of the neglect of the humanities. President Conant of Harvard expressed similar concern: "This shift seems to me unfortunate; if continued in the same direction at the same rate for another decade it might well prove disastrous. I cannot help hoping that we have reached the end of the movement from the Arts and Letters and towards the Social Sciences and that such important traditional studies as Philosophy and Classics may soon show an increased enrollment."

A concomitant result of the continuing rapid increase in interest in the social sciences has been the widespread development of the student forum idea and the organization of departments and schools to train college graduates for this service. At the University of Chicago the Charles R. Walgreen Foundation for the Study of American Institutions was established, with an endowment of $550,000; and Harvard opened its new Graduate School of Public Administration which was made possible by a gift of $2,000,000 from Lucius N. Littauer. Colgate University organized a Washington Study Project as a method of general civic education, designed primarily to help students understand their government and to function as informed citizens in a democratic society. Institutes for the discussion of public affairs and international relations were held at a number of institutions.

Colleges are also giving increased attention to the creative arts. A whole campus colony of the fine arts is being established at the University of Iowa. Many colleges, such as Bryn Mawr, Connecticut, Elmira, Goucher, Hollins, and Sweet Briar, are expanding and strengthening their work in the arts. Special physical facilities are being provided in many institutions, as at Stanford where a $750,000 theatre building, containing a little theatre, a large auditorium, classrooms, and workshops, has just been erected.

During the year there was a very definite tendency on the part of colleges and universities to extend their offerings in adult education. Particularly significant among these developments were the founding of the Center for Continuation Study at the University of Minnesota, the establishment of the year-round School for Workers at the University of Wisconsin, the opening of the Adult Center at New York University, and the offering of a reading course in American History to the public and to its own students and alumni by Harvard. Numerous other colleges

are offering programs of adult education in their communities. The University of Kentucky has been conducting a unique radio broadcasting experiment with listening centers in various areas of the State.

CO-OPERATIVE PROJECTS

There has been greater emphasis than ever before on individualized instruction and educational guidance, largely the result of persistent attack on these problems by the Educational Records Bureau and the Co-operative Test Service of the American Council on Education, as well as the group participating in the annual educational conferences on this subject. A notable contribution in this field has been made by the whole testing movement, including the Pennsylvania Study, the Co-operative Test Service, the College Sophomore Testing Programs, the College Physics Testing Program, and the many statewide testing programs.

Co-operative approaches are being made in a number of vital educational areas under the sponsorship of the regional standardizing agencies and the various national educational associations, particularly the Association of American Colleges and the American Council on Education. During the year the Association of American Colleges held a series of regional conferences at which the discussion dealt primarily with the enrichment of liberal culture in the realms of the fine arts, improvement of library facilities, academic freedom and tenure, more interest in better leadership in public life, and improvement in college teaching. The Association also published monographs on comprehensive examinations in the humanities by Edward S. Jones and a "Survey of College Faculties" by B. W. Kunkel.

Of unusual interest is the series of co-operative research studies undertaken in the leading universities of the United States under the sponsorship of the United States Office of Education during the past two years. This project has been an innovation in co-operative research at the university level. Made possible through a Federal grant of funds for the relief of unemployed educational research workers, the project was inaugurated early in 1936 as part of the emergency relief program. Sixty universities located in 32 States, the District of Columbia, and Hawaii co-operated by undertaking from one to 14 studies each. Nearly 200 local investigations were prosecuted, the average per institution being slightly over three studies. All studies were co-ordinated and directed in the Office of Education, but were locally supervised by faculty members of the universities. There was no attempt to dictate to the universities in their selection of studies; each institution chose those studies which it wished to prosecute, within the limits of available qualified workers and interests of faculty members.

Educational research in the United States has in the past been conducted largely by individuals, by various educational foundations, and by Government agencies. The result has been that it can best be characterized as a comparatively unco-ordinated attack on a wide range of educational problems, for, although various individuals and agencies may have prosecuted research studies systematically and in line with a broad ultimate plan, the product has shown much duplication of effort and neglect of many important educational areas. Another result has been that the limited scope of most studies has in large measure restricted applicability of the findings to local use.

During the past few years, there has been an increased realization on the part of American educators that co-ordinated attacks on significant educational problems will be much more productive than has been the past unintegrated program of research. The enthusiastic reception with which this new co-operative research project has met in the participating institutions has done much to prove the practicability of co-operative research on a wide scale. It is anticipated that this innovation will be significant not only because it will produce outstandingly important findings and furnish economic relief to unem-

ployed workers, but also for the value it may have in pointing the way toward a more efficient distribution of effort in the educational research of the future.

COLLEGE-RELIGION SURVEY

A comprehensive nation-wide survey, conducted by the Council of Church Boards of Education, including information from 1,340 institutions of higher education involving 828,071 students, discloses that, despite frequent assertions to the contrary, a majority of college youths in this country are not opposed to religion and the church. While there is no denying that there are dangerous influences at work in some institutions and that going to college causes a radical change in childish views, with a distinct tendency during the sophomore year away from religion in contrast to the situation in the freshman year but with a return during the last two years, the evidence of this survey abundantly supports the conclusion that "if students are not interested in the services of the church and in religious service, most of the disinterest started before they went to college and university."

COLLEGE PRESIDENTIAL CHANGES

The year saw changes in the presidencies of 78 colleges and universities, 12.2 per cent of the 641 presidents listed in the *Educational Directory* published by the United States Office of Education, and in addition presidents were elected to head the two new colleges established in 1937. At the close of the year 16 existing vacancies were being filled by temporary encumbents. The turnover among the administrative heads of our higher educational institutions, which was unusually heavy during 1937, affected many of the leading colleges and universities, and included the passing from the academic scene of a number of outstanding educational leaders. Some were claimed by death, others by retirement on account of age or reassignment of duties, especially in the Catholic colleges, and a few by assumption of similar offices at other institutions, while several changes were the result of irreconcilable conflicts with their boards of trustees.

Among the significant losses were Angell of Yale, Bryan of Indiana, Denny of Alabama, Farrand of Cornell, Kirkland of Vanderbilt, and Woolley of Mount Holyoke, as well as many others who had served long and well as executives in the higher educational field. Although the average term of office of a college president seems to be somewhere between four and six years, there are no less than 38 who have served as college presidents for more than a quarter century, either in their present positions or in two or more college presidencies, and three of them have been in their present posts for more than 40 years.

During the year Robert L. Kelly retired from the executive secretaryship of the Association of American Colleges after 23 years of service in that capacity as the "guide, philosopher and friend" of innumerable college presidents, old and new; he had previously been for many years a college administrator himself. He was succeeded by President Guy E. Snavely of Birmingham-Southern College.

Among the junior colleges, changes in the administrative heads were reported for 61 institutions, or 11 per cent of the entire group, exactly the same percentage as for 1936, but much less than the change of the previous year, when it amounted to 14.8 per cent. In the publicly controlled junior colleges the change was 11.9 per cent, in the privately controlled ones, 10.4 per cent.

COLLEGE FINANCE

One of the most serious problems facing colleges and universities is the balancing of the academic budget and adjusting it to constantly changing conditions. Most institutions of higher learning, especially those privately controlled, receive their income from tuition fees, endowment, and gifts or bequests. The major items of expense are faculty salaries and operating costs. The success of the whole educational program de-

pends upon a well-adjusted balance between these items, and it is only through the discovery of new and ever-increasing sources of income that our higher educational institutions have been able to continue to accomplish their mission as centers of creative scholarship and research.

The present trend in faculty salaries is upward; salary cuts made since 1929 are, in many instances, being restored, and most institutions are trying to adjust salaries to the cost of living, and the present trend of the latter is upward. In tune with the times, annuity and insurance plans are also being adopted. In many a college and university the raising of the standard of instruction, often synonymous with increased salaries, is the president's chief concern; frequently it is only by an increase in salary that it is possible to hold the better men in the face of tempting offers from the wealthier universities as well as industry and the professions. Nevertheless, on many college campuses the salary situation is acute and presents the greatest financial need.

At the same time operating costs, largely following as they do current prices in the open market, are showing a sharp upward swing. The necessity of replacing supplies depleted during the depression, renovating the physical plant, and purchasing books needed to maintain libraries provides an additional factor, even more powerful, in increasing present operating costs. Furthermore, wages of the secretarial staff and plant department are in competition with outside wages and at present are increasing.

The returns from tuition are a direct product of student enrollment and the fees charged. Several commentators writing on the future trend in enrollment prophesy that in a few years American colleges and universities will be drawing from a steadily diminishing reservoir of student material, by reason of the population trends, the changing status of those economic groups from which the higher educational institutions draw, the attendance records in elementary and secondary schools, and, in the case of privately endowed colleges and universities, the increasing competition of tax-supported institutions. A study, made by the John Price Jones Corporation, of college tuition fees in 30 privately endowed colleges and universities reveals that, after a continued increase over a thirty-year period, 1907–1937, the line is beginning to flatten out. The consensus seems to be that, except in highly specialized institutions, the fee is as high as it is practicable to place it. Yet, at least two institutions, now charging high tuition fees, have announced increases effective in 1938.

The present insistent demand for scholarships and the quick response to the student aid offered by the National Youth Administration indicate that any substantial increase in tuition fees would work great hardship and probably would fail in its purpose of yielding increased net income. Through the Federal aid program approximately 80,000 college and graduate students received $20,000,000 during 1937, but this temporary financial assistance to needy students suffered a reduction from 12 per cent in 1936 to 8 per cent of the full-time enrollment in colleges and universities in 1937.

As in the case of income from tuition fees, there is little hope for an increase in the return on endowment investments in the near future. In fact the tendency is exactly opposite. For the country as a whole, there was a steady rise in endowment yield from 1920 to 1926 when the average reached a high of 5.08 per cent. The latest figures available for subsequent years shows a steady decline; at present the average rate is approximately 3.5 per cent. With the continuance of cheap money, educational institutions are likely to find their bond holdings gradually retired, new issues available only at lower interest rates, and their income therefore adversely affected.

GIFTS AND BEQUESTS

A summary, recently published by the John Price Jones Corporation of

gifts and capital amounts derived from bequests received during the six-year period 1930–36 by the 46 colleges and universities, including men's, women's and coeducational institutions, listed, out of a total of $244,812,968 received by these institutions during the six-year period, $90,478,375 in bequests. Of $28,194,455 received by Cornell University during 17 years, 1920–37, more than one-fourth the total amount, $7,297,801, was in bequests; during 1936–37 a total of $1,473,870 was received, $581,245 in bequests. A list of large individual donations of $50,000 or more, published in the 1938 *World Almanac,* records a total of $77,773,307 received from bequests during 1937, of which $67,388,237 was given to colleges and universities, and there appear regularly in the press announcements of similar testamentary gifts, both large and small. An analysis by Marts and Lundy, Inc. of the wills probated in metropolitan New York during the twelve months ending September 30, 1937 indicated that, of the 10,432 wills reported of a total value of $91,164,284, there were 862 containing bequests to some form of philanthropy in the total amount of $27,393,457 and of this number 114 bequeathed $5,899,238 to institutions of higher learning. While there are no accurate statistics readily available of the total amount received through bequests by all our institutions of higher learning, the data given above are indicative of the potentialities of this form of giving.

A number of institutions have announced fund-raising campaigns, usually conceived as sustained efforts over a period of years, based upon well-defined development programs. However, the emphasis seems to be rather on the formulation of systematic annual giving programs, such as the alumni funds at Yale, Cornell, Dartmouth, Northwestern, Harvard, and Western Reserve. Where these alumni funds are in existence there is unquestioned enthusiasm over their accomplishments and further possibilities, and in a number of places projected plans for the establishment of alumni funds are under way. While they are not a panacea for all university ills and cannot be expected to solve all the financial problems, they do provide both a convenient and an easy medium through which the alumni and other friends of an institution can rally to its support and give tangible expression to their interest in its welfare.

In general, building construction has not kept pace with the increasing demands for physical facilities, but during the past year many colleges and universities have, through outright gifts as well as bequests, been enabled to make sorely-needed additions to their physical plants and a few have launched extensive buildings programs. The Public Works Administration has also contributed toward the stimulation of the movement to construct new buildings by approving projects on college campuses amounting to nearly $60,000,000. On the other hand, three colleges found it necessary during the year to do some refinancing as the result of foreclosure proceedings, while others had to curtail their educational programs because of investment difficulties and diminished income.

ANNIVERSARIES AND CELEBRATIONS

Important milestones in the history of American higher education were passed and appropriately celebrated during 1937, including the sesquicentennials of Franklin and Marshall College and the University of Pittsburgh; the centennials of the Universities of Michigan and Louisville, De Pauw University, and Guilford, Knox, Marshall, Mount Holyoke, and Muskingum Colleges; the semi-centennials of Clark University, and Alma, H. Sophie Newcomb, Occidental, and Pomona Colleges; and the twenty-fifth anniversary of the founding of Reed College. As part of the bicentennial of the University of Pennsylvania, which will come in 1940, significant anniversaries of several of the divisions of the University were celebrated during the year. At Oberlin College the one-hundredth

anniversary of the beginning of college education for women and of coeducation on the college level was commemorated. Brown University paid tribute to one of its distinguished alumni, Horace Mann, on the centennial of his appointment as the first secretary of a state board of education in Massachusetts and the subsequent birth of a public school system which was to influence the entire nation. The fiftieth anniversary of the opening of the first library school in the world was observed at Columbia University. A series of commemorative events were held at Mills College to mark the eighty-fifth anniversary of its founding, and the State University of Iowa celebrated the ninetieth anniversary of its founding with a conference on higher education. Twenty years of educational co-operation were commemorated at the annual meeting of the American Council on Education.

PUBLICATIONS

During the year the final two of the seven monographs in the series on "The Evaluation of Higher Institutions" appeared; they dealt with *The Faculty* and *The Educational Program* (University of Chicago Press). This significant series of monographs reports the results of what is undoubtedly the most comprehensive and constructive investigation of this particular problem which has ever been made. Made under the joint support of the General Education Board and the North Central Association of Colleges and Secondary Schools by a group of recognized specialists, this study has served as the basis for the adoption of a new procedure for accrediting higher educational institutions. The volumes previously published deal with *Principles of Accrediting Higher Institutions, The Library, Student Personnel Service, Administration,* and *Finance.*

As by-products of the celebrations mentioned, several valuable historical documents were published, among them *Through One Hundred and Fifty Years* by Agnes Lynch Starrett (University of Pittsburgh Press), *Indiana Asbury—De Pauw University 1837–1937* by William Warren Sweet (Abingdon Press), *Guilford: a Quaker College* by Dorothy Lloyd Gilbert (Guilford College), *On a New England Campus* by Frances Lester Warner (Houghton, Mifflin) and *The Centenary of Mount Holyoke College* (The College), *The History of Occidental College* by Robert G. Cleland (The College), and *Father Shipherd's Magna Charta, a Century of Coeducation in Oberlin College* by Frances Juliette Hosford (Marshall Jones). The faculty of Muskingum College published *A College Looks at Its Program,* a stimulating analysis of the educational program and plans of the college. In an administrative report "The First Fifty Years," President Atwood of Clark University reviews the important events in the history of that institution. The accounts of the celebrations were variously printed in booklets and magazine articles; some will appear later, as in the case of the report of the centennial of the University of Michigan and the educational conference held on that occasion.

Two important historical contributions published during the year were *Stanford University, the First Twenty-five Years* by Orrin L. Elliott (Stanford University Press) and *John Carlisle Kilgo, President of Trinity College 1894–1910* by Paul Neff Garber (Duke University Press). Through the use respectively of the annual reports of the Presidents of Barnard and of Columbia University the first two volumes in a series entitled "The Rise of a University," were presented: the first, *The Later Days of Old Columbia College* edited by William F. Russell and the second *The University in Action* edited by Edward C. Elliott (Columbia University Press). *A Guide to Columbia University* by John William Robson (Columbia University Press) contains a useful summary account of the history and traditions of that institution. *American Education* by James Rowland Angell (Yale University Press), *The Nature of a Liberal College* by

Henry M. Wriston (Lawrence College Press), and *Living in Crisis* by Ernest Hatch Wilkins (Marshall Jones) reproduce some stimulating pronouncements made in addresses and articles by these three college presidents.

A number of other significant publications in the field of higher education appeared during the year, among them *Current Issues in Higher Education* edited by William S. Gray (University of Chicago Press), *The American State University; Its Relation to Democracy* by Norman Foerster (University of North Carolina Press), *Adventuring in Education* by Paul H. Hanus (Harvard University Press), *What About Survey Courses* by B. Lamar Johnson (Henry Holt), *Planning for College* by Max McConn (Frederick A. Stokes), *The Art of Going to College* by J. Franklin Messenger (Thomas Y. Crowell), *Education in a Democracy* by Alonzo F. Myers and Clarence O. Williams (Prentice-Hall), *Academic Procession* by James R. Parker (Harcourt, Brace), and *The Trends of Professional Opportunity in the Liberal Arts Colleges* by Merle Kuder (Teachers College, Columbia).

Treatments of some of the economic problems confronting those concerned with higher education are contained in the excellent report on "Depression, Recovery and Higher Education," prepared by a committee of the American Association of University Professors (McGraw Hill), and the research memorandum on "Education in the Depression" by the Educational Policies Commission (Social Science Research Council), and also the accompanying bibliography. *Unemployment in the Learned Professions* by Walter M. Kotschnig (Oxford University Press) reports an international study of occupational and educational planning, with particular reference to the college and university field.

EDUCATION FOR THE PROFESSIONS *

By Doak S. Campbell

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MEDICAL EDUCATION

Medical School Survey.—Of outstanding significance to medical education in North America is the completion of a three year comprehensive survey of all undergraduate medical schools in the United States and Canada. The publication of the results of this survey marks a third great epoch in the improvement of medical education during the present century. In 1907 the Council on Medical Education and Hospitals of the American Medical Association first published a classified list of medical schools. Then followed the Carnegie report in 1910 which aroused both the professional and the lay public to a consciousness of need for vigorous action. After twenty-four more years, during which phenomenal improvement was made in medical education, the Council, with the cooperation of the Association of Medical Colleges and the Federation of State Boards of Medical Examiners undertook a survey to be completed by the close of 1936. A complete report of the survey has not been published although partial reports have been made through official publications and by papers presented at professional meetings.

All the recognized medical schools in the United States and Canada and two non-recognized schools were visited by the official representative of the Council, Dr. Herman G. Weiskotten. At each institution the inspector was accompanied by a repre-

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sentative either of the Association of American Medical Colleges, of the Federation of State Boards of Medical Examiners or of the Council. By means of interviews with deans, professors, and other persons, and by careful observation of the physical properties and of the work in progress, a basis for evaluation was secured.

Prior to visitation detailed questionnaires were sent to all the institutions. The results obtained were tabulated and were used in connection with the information secured at the time of the visits. On the basis of these sources of information a pattern map similar to that developed in recent years by the North Central Association of Colleges and Secondary Schools was made for each school. During the progress of the survey the facts discovered by visits and analysis of questionnaires revealed conditions so unsatisfactory that some schools were placed on probation and some were removed from the Council's approved list. A number of institutions have been reorganized and have made fundamental improvements in student and faculty personnel. It seems to be agreed by those responsible for the study that "the students of medicine are being more carefully selected and their numbers have now a more reasonable relationship to existing facilities. Medical faculties have been strengthened both in numbers and competence and financial support has been materially increased. Clinical facilities are not yet satisfactory in kind, amount, availability or academic control."

Medical Licensure. — For the thirty-fifth consecutive year statistics for the year 1936–37 were prepared and published in August, 1937 by the Council on Medical Education and Hospitals of the American Medical Association. In the United States and outlying possessions, 9,008 licenses were issued, 6,263 on the basis of examination and 2,745 by endorsement of credentials. This represented an increase over the previous year of 549 by examination, and 555 without examination, or a total of 1,104. These figures do not represent additions to the profession since those licensed by endorsement represent individuals who migrated from other States. The net number added to the profession was 6,166.

The percentage of failures of applicants for licenses has shown a small but consistent increase during the past four years. These are 1933, 7.6 per cent; 1934, 8.4 per cent; 1935, 9.1 per cent, and 1936, 10.1 per cent. The highest percentage of failures for the five-year period was in Massachusetts, 46.5 per cent. This was due largely to the fact that the licensing board is required to admit to its examination the graduates of unapproved schools, many of whom repeatedly fail. With authority granted by legislative act in 1936 to approve medical schools, the board of medical examiners in Massachusetts are planning to provide a list of approved schools by the time the act goes into effect in 1940.

The percentage of failure among graduates of the various medical schools shows considerable variety. Among 67 schools in the United States the range is 0.0 per cent to 22.5 per cent. In Canada the range is greater, 0.0 per cent to 50 per cent. Fourteen medical schools had no failures among their graduates before state licensing boards.

Since 1904 the total number of registrations has increased only 2,280. This increase is represented mainly by those who registered without written examination. The percentage of candidates who failed never fell below ten per cent until 1925 but it continued to decline until it reached only 5.7 per cent in 1930.

Preliminary Education. — Since 1915 the Council on Medical Education and Hospitals of the American Medical Association has published annually a list of colleges approved for preliminary training of prospective medical students. The list for 1937 includes 764 institutions approved by the following accrediting associations:

Association of American Universities	282
North Central Association	275
Southern Association	230
Middle States Association	128
Northwest Association	63
New England Association	47

Although the minimum preliminary requirement of two years of college work has been recognized by the Council since 1917, 52 of the 87 recognized medical schools in the United States and Canada require three or more years. Five institutions require one year, 30 require two, and one requires two and a half years. The five that require only one year are located in Canada where a medical course of not less than five years is required.

Length of Medical Course.—Only 11 schools on the approved list maintain two-year medical courses. These institutions are located in Alabama, Mississippi, Missouri, New Hampshire, North Carolina, North Dakota, South Dakota, Utah, West Virginia, and Saskatchewan, Canada. The enrollments in these schools are small, ranging from 20 in the University of Mississippi to 87 in the University of Alabama. In 55 institutions the medical course is four years in length; in 17 it is five years; and in four, all located in Canada and requiring only one year preliminary, it is six years.

Enrollments. — Enrollments in medical schools increased steadily from 1920 to 1935 when the number reached 22,888. In 1936, however, there was a decrease of 324 and in 1937 a further decrease of 469.

Age of Graduates.—Contrary to what one might suppose, namely, that the increase in pre-medical requirements would tend to advance the age at which students graduate from medical school, the graduation age remains practically stationary. In fact, in 1937 the average age of graduates from four and five-year courses was 26.5 years. This is identical with the average age of graduation in 1916.

Internships and Residencies.—The increasing importance of internship as an essential part of medical education is reflected in the fact that 91.8 per cent of the 1936 graduates from approved medical schools, exclusive of the graduates of 13 schools that make internship a requirement for the medical degree, voluntarily chose to continue their education in this manner. In its report for 1936–37, the Council on Medical Education of the American Medical Association listed 712 hospitals considered suitable for providing adequate facilities for internships. The number of internships provided was 7,167. Of the three types of internship provided, 77.4 per cent were "rotating"; 18.5 per cent were "mixed"; and 3.1 per cent "straight" or "mixed and straight."

Residencies which provide preparation for the practice of some specialty are available in increasing numbers. The official summary of the American Medical Association lists 438 hospitals in which there are 3,202 residencies. Thirty-one different fields of specialization are provided.

LEGAL EDUCATION

The American Bar Association.—During 1937 the Council of the Section on Legal Education and Admissions of the American Bar Association reported consistent progress with respect to two of its major activities. These activities were the stimulation of the adoption of higher standards for admission to the bar and the application of standards for the approval of law schools.

Admission Practices. — In 34 States two years of college work or the equivalent are prerequisite to bar admission, and in 27 of these States the two years are required before admission to law study. In one State (Kansas) an academic degree is required, after which either three years and a degree or four years of office study are required. Progress is further indicated by the fact that in all but one State and the District of Columbia, the bar associations have gone on record as favoring the minimum requirement of two years of college education before admission to bar examination. In only two States, Arkansas and Georgia, are there no general education requirements. This is in marked contrast to conditions seven years ago when 15 States made no general education requirements for admission.

As a result of concerted activity on the part of bar associations there is

a trend toward a longer period of law study. In 39 States the minimum period is three years, and in only four States are there no specific requirements as to a definite period of training.

Approved Schools of Law.—During 1937 eight schools were added to the approved list of the American Bar Association. In accord with the usual procedure these schools have been given provisional approval subject to reinspection before receiving full approval. These schools are as follows: University of Buffalo, The School of Law, Buffalo, N.Y.; Chicago-Kent College of Law, Chicago (except as to part-time students who will graduate with less than four years of law school study); Indiana Law School, Indianapolis (except as to those students who commenced their law school study prior to September, 1936); Kansas City School of Law, Kansas City, Mo.; University of Santa Clara, College of Law, Santa Clara, Calif.; Wayne University Law School, Detroit, Mich. (except as to those students who will graduate with less than four years of law school study); Brooklyn Law School, Brooklyn, New York City; and St. John's University School of Law, Brooklyn, New York City.

In addition, four schools, previously given provisional approval, have been reinspected and given full approval. These schools are: Fordham University, School of Law, New York City; Loyola University College of Law, Los Angeles; University of San Francisco, School of Law, San Francisco; and Wake Forest College, School of Law, Wake Forest, North Carolina. With these additions the schools on the approved list of the American Bar Association number 97, approximately 51 per cent of the 190 law schools in the United States.

The effectiveness of the standards is reflected in the practices in a number of the States regarding bar examinations. The report of the Council states that "there are now 14 states in which study in a law school will not be recognized as a qualification for the bar examination unless that school is on the approved list o. the American Bar Association" (p. 324).

Post Admission Training.—Resolutions submitted at the 1937 meeting of the American Bar Association called for some systematic plan for assisting practicing lawyers in extending their field of knowledge. Attention was called to the fact that comparatively little is being done in this regard but that the demand is strong. Certain types of service now being undertaken were pointed out and it was suggested that such services be greatly enlarged. These are: (1) law reviews, 56 in number, which are published periodically and given wide circulation; (2) meetings of local, state, and national bar associations where programs of practical value to practicing lawyers are provided; and (3) courses and institutes provided by law schools. The resolutions mention specifically the provision by university law schools of "short courses adapted to practicing lawyers, for sending out lectures to bar associations, by teaching through correspondence or as otherwise might seem appropriate for the purpose" (p. 326).

Graduate Instruction.—Although a number of law schools offer graduate courses, such courses are not largely attended by practicing lawyers. Twenty-eight members of the Association of American Law Schools offer courses for students who have already secured a first law degree. These schools are well distributed geographically. One course has been mentioned as especially successful. It was organized primarily for the benefit of young lawyers but was supplemented with specialized courses for older lawyers. The course covered 15 weeks, meeting twice a week, for two-hour sessions in the evening. The success of the course attracted the favorable attention of the New York Bar Association which resulted in special study by a committee in 1936 with suggestions for future development on a more extended scale.

THEOLOGICAL EDUCATION

General.—No significant changes occurred during 1937 in the number

or type of theological schools. Approximately 200 schools for the training of Protestant ministers were in operation in the United States and Canada. There were 93 major Catholic seminaries in the United States staffed by 953 instructors and attended by 8,019 students. One thousand, two hundred and three of these students were ordained to the priesthood. In addition, there were 79 Catholic preparatory seminaries staffed by 1,078 instructors and attended by 9,427 students. The enrollments in all types of theological schools remained fairly stable. However, among the Protestant institutions the application of recently developed standards is beginning to show some slight influence. Selective processes of admission, with higher standards and a tendency to prolong the period of theological education, appear to be resulting in a smaller number of graduates than was characteristic of these schools in the years preceding. This condition, which tends to make the placement of graduates from standard theological schools easy, is quite generally welcomed.

Theological schools felt the effects of the depression perhaps less than did other types of institutions for higher education. Likewise, they have probably benefited less by any upturn in economic conditions. Severe retrenchments were not frequent, but there were few notable expansions of work in theological schools during 1937.

American Association of Theological Schools.—This organization, established in 1936, has as one of its primary functions the co-operative improvement of the quality of theological education. Standards adopted in 1936 have been promulgated and a number of inspections by members of the Commission on Accrediting were made during 1937. These inspections are scheduled to continue during the session 1937–38, the results to appear in a full report in 1938.

In addition to the work of accreditation the Association held a number of conferences of theological schools in various areas of the United States during 1937. Recent developments in theological education and problems peculiar to a given region were given special consideration.

The work of the Association is increasingly turning toward the extension of theological education to ministers in-service. Plans are under consideration whereby the theological schools may make their combined resources available through extension work to ministers in-service. Such services are being made available both to partly trained ministers and to those with full seminary training who desire further work.

ENGINEERING EDUCATION

Engineers' Council for Professional Development.—The Engineers' Council for Professional Development began in 1936–37 the application of standards developed through its program for improvement of the status of the engineering profession. Through its Committee on Engineering Schools inspections were made of the curricula of a majority of the engineering schools of the United States. These inspections were made upon request of the institutions and, therefore, were not compulsory. Standards, previously published, were applied and detailed reports were submitted with respect to each institution inspected.

Accredited List Published.—On Oct. 1, 1937, a tentative list of accredited undergraduate curricula was published. The list contains the names of 107 institutions and specifies the accredited curricula in each school. The list includes only such undergraduate engineering curricula as have been adjudged by the E.C.P.D. as worthy of accrediting. Certain specialized curricula, though apparently outstanding in restricted fields, were not included because the Committee did not consider them closely enough related to engineering.

In a number of cases the accreditation is provisional for a period of one to three years subject to reinspection. At the time the list was published the applications of five additional schools were before the Committee with re-

quests for inspection during the school year, 1937–38. The E.C.P.D. has announced its intention to revise and publish the list of accredited schools and curricula annually. The Committee on Engineering Schools also plans to keep currently informed regarding significant changes in curriculum, staff, facilities, and enrollment in accredited institutions, and to continue its program of inspection of applying institutions.

Types of Engineering Curricula.—In the 107 accredited institutions included in the published list 16 different curricula are offered. The names of the curricula and number of institutions in which each type of curriculum is offered and accredited are as follows:

Aeronautical Engineering	10
Agricultural Engineering	4
Architectural Engineering	11
Ceramic Engineering	6
Chemical Engineering	28
Civil Engineering	102
Electrical Engineering	97
Electrochemical Engineering	2
General Engineering	5
Industrial Engineering	16
Mechanical Engineering	92
Metallurgical Engineering	25
Mining Engineering	26
Naval Architecture and Marine Engineering	3
Petroleum Engineering	10
Sanitary Engineering	4

Committee on Engineering Schools.—Committees for inspection are drawn from the professional groups represented in the Committee on Engineering Schools. Membership of the Committee on Engineering Schools is as follows: Karl T. Compton, Massachusetts Institute of Technology, chairman, representing American Institute of Electrical Engineers; H. P. Hammond, Pennsylvania State College, vice-chairman, representing Society for the Promotion of Engineering Education; G. M. Butler, University of Arizona, representing American Institute of Mining and Metallurgical Engineers; Ivan C. Crawford, University of Kansas, representing American Society of Civil Engineers; Harry A. Curtis, Tennessee Valley Authority, representing American Institute of Chemical Engineers; P. H. Daggett, Rutgers University, representing National Council of State Boards of Engineering Examiners; and A. A. Potter, Purdue University, representing American Society of Mechanical Engineers.

Changes in Constitution and By-Laws.—At the 1937 meeting of the Society for the Promotion of Engineering Education, the Council recommended for adoption at the next annual meeting of the Society an amendment to the second paragraph of Article II of the Constitution by adding the provision that active institutional members of the Society shall include "distinguished national professional engineering societies."

Three new sections of the By-Laws of the Society were unanimously approved by the Council as follows:

Ninth. Any educational institution which has one or more of its curriculums accredited by the Engineers' Council for Professional Development shall be considered as "recognized" within the meaning of the constitutional requirement for active institutional membership, and no other educational institution within the United States or its territorial possessions shall be so considered.

Tenth. Any engineering degree-granting educational institution in continental North America, outside of the United States, shall be considered as "recognized";

(*a*) If one or more of its engineering curriculums have been accredited by an agency whose standards are adjudged by the Council of the Society to be not lower than those of the Engineers' Council for Professional Development, or

(*b*) If no suitable accrediting agency is available to appraise its engineering curriculums, but one or more of these curriculums are adjudged by the Council of the Society, upon satisfactory evidence, to meet standards not lower than those of the Engineers' Council for Professional Development.

Eleventh. Any junior college or other educational institution giving instruction which is adjudged by the Council of the Society, upon satisfactory evidence, to be substantially equivalent to the first two years of

one or more curriculums accredited by the Engineers' Council for Professional Development shall be considered as among those institutions "giving instruction in engineering" within the meaning of the constitutional requirement for associate institutional members.

(Present "ninth" section to be renumbered "twelfth." Additions or amendments may be made to those By-Laws at any regular meeting of the Society by a two-thirds affirmative vote of the membership present at the business session, provided that the additions or amendments shall have been approved by a two-thirds affirmative vote of the Council membership in attendance at the meeting, and shall have been recommended by that body for adoption.)

The Council also proposed that "if and when the Society adopted the proposed new tenth section of the By-Laws, that we should add to the list of active institutional members the Canadian institutions which are listed as institutional members in the *Year Book*."

Graduate Instruction.—No outstanding development in the field of graduate work in engineering was reported during 1937. An extensive conference was held in connection with the annual meeting of the Society for the Promotion of Engineering Education. Incomplete reports at that time indicated that improving industrial conditions had brought some recession in enrollment of graduate students in some engineering schools, but there had been growth in others. Considerable gain in part time graduate work was reported by Polytechnic Institute of Brooklyn, University of Pittsburgh, New York University, and others. The outstanding example of graduate work in residence was that of Massachusetts Institute of Technology with a total enrollment of 619 students.

The trend of graduate instruction is in the direction of more highly scientific subject matter and method. This is especially noteworthy in certain fields, such as applied mechanics and chemical engineering. The outstanding development is in the field of soil mechanics.

BUSINESS EDUCATION

Current Trends.—On the college ate level, the trend toward the us of the professionally trained econo mists and business men, not alone b government, but by business ente prises, as was characteristic of th previous year, continued. Increase governmental intervention in busine has required the use of statistician accountants, and business economis by both governmental units and bus iness organizations. Increased compe tition among business men and widening appreciation of the fact tha business cannot successfully be con ducted by "rule of thumb" metho has gradually increased the busine man's awareness of the need fo trained personnel.

During the first half of 1937, bus ness conditions were such that gradu ates of collegiate schools of busine were readily placed and at increasin salaries over graduates of previou years. Likewise, enrollments in co legiate schools of business also tende to increase. The enrollment in co legiate business education is mor likely to follow the course of th business cycle than other types o professional education since it is d rectly affected by what is happening i business. The recession in the latte part of 1937 did not affect enroll ments in collegiate business educatio since it occurred after the school yea had begun.

Certain developments in the fiel of business itself have caused busine educators to devote a great deal o attention to certain given problem In the main, these problems hav two major phases: (*a*) the tendenc to legalize certain types of prices, an (*b*) the problem of labor relation Such developments as the Robinson Patman Act and the Miller-Tyding Law, together with other types o legislation, have created problems i the field of retail distribution whic require, not alone a knowledge of law but an intimate grasp of marketin institutions and the retail structur

in particular. The tendency toward the legalization of prices has, in some fields, caused business men to devote more attention to the problem of costs because, if prices are fixed, profit margins can only be increased by greater attention toward costs. This in particular means increased attention toward problems of cost accounting and related problems in the field of production management.

Great impetus has been given to the study of labor problems and labor organization because of the constitutionality of the National Labor Relations Act. For all phases of industry, particularly manufacturing and retailing, the problem of management of labor has been a vital issue. Consequently, collegiate schools of business have been particularly concerned about possible contributions which it may make in this direction. Thus far, the collegiate schools of business as contrasted with departments of economics have been somewhat less active, although the trend is for the collegiate school of business to develop courses and pay particular attention to problems of labor and personnel relations.

The recent enactment of the George-Deen Act which provides Federal funds for training workers in the distributive occupations on the secondary level has had the effect of increasing interest in this particular work. The schools of retailing will probably have to train teachers for secondary school service. Although there is a division of opinion as to the long-run effects of the George-Deen legislation, it is doubtless true that it will create greater training facilities both on the secondary and the collegiate levels in the field of retailing.

Professional Business Education.—Historically, the gap between collegiate or professional education and secondary school education has been rather wide. The secondary school business education has been in the past primarily clerical whereas professional business education has been managerial in nature. The intellectual camaraderie between the university professor of business and the high school instructor of secretarial work or bookkeeping has not been close. Because of the active interest of one or two collegiate schools of business, there is evidence that the gap between high school and collegiate business education will be reduced and greater continuity of instruction gained. This is developing for several reasons. Deans of collegiate schools of business are beginning to realize that there is necessity for better articulation in secondary schools so as to have more adequately trained students, and also because they are becoming aware of the fact that there is a need for common and basic business education for everybody. One evidence of this interest in improved articulation with lower schools is the increased trend toward the training of business teachers on the part of the collegiate schools of business. A relatively short time ago, the training of secondary school teachers of business was carried on by the profit-making business college or by the normal school or teachers' college. The inadequate results of this type of training has become apparent to deans of collegiate schools of business, and they now see the necessity for taking an active note in this direction.

Structurally, the collegiate school of business did not change markedly during 1937, but there is some tendency to indicate a lengthening period of training. Collegiate business schools are varied in type of organization. There are two exclusive graduate schools of business in this country: a few that are dominantly graduate schools and many that are under-graduate in nature. The increasingly common form of organization is to have the professional training in business preceded by two years of general collegiate education. There is a tendency toward the adoption of a two-year general program followed by a three-year professional program in business, making a total of five years of work in all.

The whole curriculum problem in the field of collegiate business education is a result of a conflict which has gone on ever since the inception of professional business education—

a conflict of the philosophy of whether or not collegiate business education should be trade training or a professional type of training comparable to that in law or medicine or engineering. The protagonists of the managerial or professional type of training appear to be gaining headway and the advocates of trade training seem to be yielding in their point of view. Implicit in the conflict of these philosophies of business education is the issue as to whether or not students should be trained in merely "the tricks of the trade" or given a thorough concept of business as a social institution. As a result of various serious economic dislocations, governmental intervention in business, the apparent need for the professionally trained business manager, it has become apparent to those responsible for the professional business curriculum that a long-run social point of view must prevail rather than a short-run "tricks of the trade" money-making point of view.

TEACHER EDUCATION

Standards and Trends. — The prospective teachers for the elementary and secondary schools of the United States are receiving their preparation in more than 1,200 different institutions of post-high school grade. Included among these are junior colleges, normal schools, teachers colleges, liberal arts colleges, land-grant colleges and universities. These institutions are of all sizes and strengths and are under many types of control—public, non-sectarian, denominational, proprietary. Some have as their major purpose the education of teachers for elementary and secondary schools. Others deny teacher education as an important aspect of their program, but at the same time they insist that their graduates be certificated to teach. Thus, from the standpoint of the institutions involved, the education of prospective teachers is more complex than is that of any other professional group.

Furthermore, there has been no central body, national in scope, whose function was to improve professional standards of teaching, as has been the case in medicine, in law, and in engineering. On the contrary, efforts to improve the profession have been made within each of the several States through laws and regulations governing the issuance of certificates, and, in some measure, through the standards of the regional accrediting agencies. These laws, regulations, and standards have tended to enforce further formal education on teachers already in service as well as to extend the period of pre-service education. Due, however, to the retention, in many States, of regulations permitting the granting of certificates to persons with little or no college education, the process of up-grading has been slow.

Concern is shown in many quarters over the problem of revising the courses within institutions, both with respect to the academic and the professional elements. The tendency to develop a "professional core," to replace the agglomeration of separate courses in education seems to be growing. The trend toward a "broader basic training" and the consequent trend away from early specialization as represented by majors and minors in narrow fields is reflected in catalog statements and in much of the current literature. Attempts to bring the academic and technical or professional aspects of the teacher education curriculum together into a unified or integrated whole seem to be increasing in number, although results of such movement are not yet strongly apparent.

The American Association of Teachers Colleges.—This organization has 199 member institutions of which 155 are on the accredited list. An institution on the accredited list may fail to meet fully the requirements of not more than two of the Association's Standards, provided these shall not be Standards I and XI. To be included on the accredited list of February, 1938 and thereafter, any institution which is deficient in any minute details of any standard must present evidence that the total effectiveness of the institution is sufficiently high to warrant accredit-

ment. At the 1937 meeting of the Association the following standard was added:

"XII. Administrative Stability. The appointment of administrative officers and of faculty members and the determination of educational policies should be governed by professional considerations. Political factors should not be permitted to interfere with the efficiency of an institution. The spirit of these principles should also be demonstrated in the internal administration of the college for the development and maintenance of the best type of faculty service and of growth."

Nation-wide Study of Teacher Education Problems.—Late in 1937 the American Council on Education received a grant to carry on a study of teacher education in the United States covering a period of five years. The details of the project have been under consideration by a special committee of the Council for more than a year.

In-Service Education. — Opportunities for improvement of teachers in service have been greatly expanded. In addition to the regular extension courses provided by higher institutions, numerous teacher groups have organized for study of their own problems. State-wide and local programs for the improvement of instruction have been widely developed and are now in progress in more than 30 States. Curriculum laboratories have been set up in numerous centers, particularly in 36 higher institutions located in 24 States. Illustrative materials have been produced by these laboratories and circulated among teachers. Supervisors, in many instances, have utilized such programs as their means of extending supervision. In a number of instances higher institutions have accepted a large share of the responsibility for supervision of schools within their service areas. In this manner they have provided direct in-service training to their graduates, and at the same time have brought field problems to bear upon the work of their own campuses.

NURSING EDUCATION

Association of Collegiate Schools of Nursing.—The most outstanding educational advance in the field of nursing in the recent past is the organization of the Association of Collegiate Schools of Nursing. As a result of scientific advancement, the function of the nurse since the turn of the century has been undergoing pronounced changes both in character and scope. These changes and expansions have made necessary a reshaping of nursing education. To the curriculum year by year have been added not only more hours of instruction in the fields of biological and medical sciences, but such new subjects as psychology, social science, social case work, and the like. Also, many more hours have had to be given over to the teaching of the nursing arts. These curriculum changes have been accompanied by a growing demand for assistance and co-operation from institutions of higher learning in the preparation of this new public servant, the nurse.

The movement to work out cooperate relationships between schools of nursing and institution of higher learning began in this country in 1899 when a program in hospital economy for graduate nurses was organized by Columbia University. Today there are 245 schools of nursing that have some form of connection with a college or university; 70 of these offer curricula leading to degrees; four are established as autonomous professional schools within a University (Yale University, 1923; Western Reserve University, 1923; Vanderbilt University, 1930; University of Washington, Seattle, Wash., 1933) and eight have plans under way to effect this form of organization in the near future. It is significant that, of the 70 curricula leading to degrees, 36 have been established since 1930, and that the total number (1,832) of students now enrolled for a degree program is more than twice the number who completed programs of this type up to 1936.

As the number of schools entering into some relationship with institutions of higher learning rapidly in-

creased, it became obvious to nurse educators that some machinery should be established to guide and direct such a movement. To this end, therefore, the Association of Collegiate Schools of Nursing was formed in May, 1935. The major objectives of this organization as stated in its contitution are: to develop nursing education on a professional and collegiate level and to promote and strengthen relationships between schools of nursing and institutions of higher learning. Membership is restricted to schools, or departments, of nursing that have definitely committed themselves to the task of developing their curricula on a collegiate and professional basis as part of a system of higher education.

It is of interest to note that the Association "does not consider size as important as the development of sound standards" and "it wishes to bring together only those schools (or departments) that are free to control and able to support their educational policies."

There are 17 active members of the Association from nursing schools or departments of the following institutions: Catholic University, Columbia University, George Peabody College for Teachers, Ohio State University, Simmons College, Skidmore College, St. Louis University, St. Theresa College, Syracuse University, University of California, Uiversity of Oregon, University of Virginia, University of Washington, Vanderbilt University, Wayne University, Western Reserve University, Yale University, and four associate members —Duke University, University of Michigan, Rochester University, and Washington University.

Accrediting Agencies. — Three agencies at the present time are concerned with the accrediting of schools (or departments) of nursing: (1) National Organization for Public Health Nursing, which through its Education Committee officially approves postgraduate courses in public health nursing; (2) Association of Collegiate Schools of Nursing, which is concerned only with the collegiate school of nursing (*i.e.*, the school offering a degree in nursing); and (3) the Boards of Nurse Examiners of the several States which are empowered by law to classify schools on the basis of their ability to provide safe nursing care to the public.

Although for some years every State in the Union has had a Board of Nurse Examiners fully authorized by law to administer the State Nurse Practice Act, for various reasons these Boards have failed to bar from the field the unqualified pracitioner. Therefore, in 1925, with the co-operation of the interested Foundations, medical associations, and the American Hospital Association, the National League of Nursing Education formed a Committee on the Grading of Schools and Nursing. The original purpose of this Committee (as its name indicates) was to classify schools of nursing in the same manner, and, it was hoped, with the same results, as medical schools had been classified under the auspices of the American Medical Association some ten years previously. However, as the eight-year program of the Committee on the Grading of Schools of Nursing evolved, its first and original objective, was abandoned and it resolved itself into a fact-finding group. In the final report (*Nursing Schools —Today and Tomorrow,* page 252, Committee on the Grading of Nursing Schools, New York, 1934) which the Committee published just prior to its dissolution (1934), it recommended that the National League of Nursing Education establish a special (permanent) committee which "would bring about . . . a stimulus to the establishment of organizations to discriminate between schools, thus providing indirectly for a type of grading."

The National League of Nursing Education, at its annual convention held in Los Angeles in June, 1936, voted to assume the responsibility of classifying schools of nursing offering a diploma in a nursing course of study, and to this end established a Committee on Accrediting of Schools of Nursing. Thus was brought into the field of nursing a fourth accrediting agency. This Committee is now centering its program on "develop-

ing criteria and in the testing of the applications of these in a limited number of schools of nursing (of various types)."

Enrollment.—The number of (accredited) schools of nursing remains about the same (1,385) but enrollment continues on the up-grade. The majority of schools throughout the country, according to the latest report (Report of Nursing Information Bureau, American Nurses' Association, *American Journal of Nursing*, Vol. 37, No. 12, December, 1937) admitted one per cent more students in 1937 than in 1936. While this increase is of little or no significance in itself, the fact that the 1936 enrollment represented a five per cent increase over 1935 means that enrollment has increased some six per cent in a two-year period.

There has been some improvement in relation to the educational background of the students enrolling in the basic professional courses of study. In 1937 15 per cent of the students enrolling for the diploma in nursing courses (the educational prerequisite for admission to such a course is the completion of a regular four-year high school course) had had one year or more of college work. Also, during the past two years two of the schools holding active membership in the Association of Collegiate Schools of Nursing have advanced their admission standards from two years of approved study in a recognized college or university to the completion of a course leading to the baccalaureate degree in arts, science, or philosophy.

EDUCATION IN PUBLIC ADMINISTRATION

The last few years have seen a phenomenal growth of interest in "training for the public service." In part, no doubt, this interest was sharpened by the depression for two complementary reasons: the dearth of private employment suddenly made the public service, with its comparative stability, seem attractive to young people who in boom times would have scorned its poor pay; and the tremendous expansion of public services, accentuated by depression emergency programs, revealed a lack of trained administrators to staff the newly created or expanded agencies.

As a result, a field of education which before had languished for lack of interest except among a handful who struggled for academic recognition, suddenly seemed in equal danger of developing out of all proportion to the market for its product. Of 60 "programs of education for public administration" reported in a list compiled during the year (Charles S. Ascher, "Educational Preparation for Public Administration," *The Municipal Yearbook*, 1937, Chicago: The International City Managers' Association, pp. 219–31) 36 had been instituted in the last nine years, and 17 since 1935. Similarly, of 71 courses in public administration reported at other colleges, 58 had first been offered within the last nine years, 38 of them since 1935.

There has not been developed a generally recognized standard curriculum of training for public administration, as there is, by and large, for the older professions. One school of thought sees that in many of our public services, entrance is apt to be through a scientific or technical specialty; that in time a proficient bacteriologist will become the head of the bureau of bacteriology; that, meantime, bacteriology to be pursued in a government laboratory is no different from that in a private agency. This group would train for the public service by equipping the student "in a field of civilian competence," with some additional background to show him how a public agency operates. This approach is particularly evident in professional schools; engineers are given courses in "public service engineering," schools of social work offer courses in "public welfare administration."

Another group sees in the operation of every public agency, whatever its field of activity, certain common "housekeeping" or management problems—finance, personnel, purchasing, budgeting, reporting, organization. They believe, for instance, that one

who hopes to become a city manager, without being equipped as an expert in each of the functions of municipal government, can at least be given a speaking acquaintance with the concepts and problems of the function, so that he can deal intelligently with his technical staff, and (perhaps more important) can know when to call upon one or another of his technicians for advice. To this group experience seems to indicate that a city manager who has come up through technical training, engineering for example, would deal competently with problems of sewers and water supply, but might not see the importance of the social services of the city. They do not intimate that the training they offer will of itself make a man an executive if he has not executive ability, but they believe that there is a body of knowledge here which can profitably be taught.

Apparently, there is increasing recognition of the desirability of relating educational programs more closely with the educational prerequisites set for public employment by the recruiting agencies. While we have no "administrative class" in our American governments, as in England and other countries, in a few governments a career ladder is being opened, the bottom rung of which is a subordinate administrative post, rather than a technical one. Increased attention reveals more clearly different elements of the training problem. True, bacteriology, forestry, accounting, engineering, and many other techniques are equally valid in public and private employment, but certain specialities have no equivalent in private enterprise, such as police and fire work. Training for them raises special problems and calls for separate treatment. In a small, but increasing number of communities, these careers are beginning to attract college-trained men. Yet, on the whole, training for these and many other classes of public employees must be done as "post-entry" or "in-service" training, either by intensive short courses, or by "sun-down" classes. A tremendous impetus to such training was given in 1937 by the George-Deen Act, which broadened the scope of Federal vocational education grants to include "public service occupations." Hundreds of training courses for all classes of public employees—milk inspectors, policemen, assessors, firemen, sealers of weights and measures —reaching tens of thousands of officials, have been given in recent years by universities, state leagues of municipalities, governments themselves.

Within the last two years the University of Minnesota, and now Harvard (under the gift of Lucius Littauer), have gone a step further, and developed sustained year-long courses for men and women already in government employ who can obtain leave of absence to round out their backgrounds and equip themselves better for responsible posts.

Another significant trend in public service training should be noted—the development of a program called, by analogy to medical training, internship, under which a person with special schooling has an opportunity to watch the wheels go round in a government office as part of his education, before public employment. The National Institute of Public Affairs has about 40 such internes from many colleges scattered through Washington bureaus; in California, New York, and elsewhere such programs are being worked out by cooperation between the universities which continue educational guidance of the internes, and sympathetic officials who recognize the need for developing competent administrators.

There is an increasing feeling on the part of those closely associated with public administration that, except for a few institutions which are prepared to offer intensive training, we do not need many "schools of public administration." What is needed at most colleges is a willingness to let students cross freely between departments to obtain the combination of courses which will prepare them for the branch of the public service in which they are interested (with the addition, perhaps, of a few courses to the existing curriculum); some teacher or small com-

mittee who will serve as a center of information and guidance, knowing the current employment opportunities in government, and advising students how best to equip themselves for them; and perhaps most important of all, a spirit upon the campus that public service is a life career of dignity and social usefulness to which a competent student may proudly devote himself.

EDUCATION FOR SOCIAL WORK

Professional education for social work has developed as a result of the concern of practitioners and of social work leaders that some measure of discipline and systematic study be required of those wishing to enter this profession. The first school (now the New York School of Social Work) was organized in 1898 by the New York Charity Organization Society. In 1901 the settlement group in Chicago was influential in organizing courses under the extension division of the University of Chicago resulting in the present School of Social Service Administration, and in 1904 the present Simmons College School of Social Work was started in Boston under the auspices of Simmons College and Harvard University. Other schools followed slowly, but during the World War and the resultant expansion of the American Red Cross, and, similarly during the depression and the organization of the Federal Emergency Relief Administration, a wide-spread interest in social work was created. In 1937 there were 32 schools of social work within the membership of the American Association of Schools of Social Work, which is the national accrediting body in this field of education. In addition, there are certain non-association schools or departments and, from time to time, institutes, special courses and other less formal educational programs available to students in many different States and localities.

Although leaders in social work have for many years stressed the importance of professional preparation under university auspices, formal education for social work developed in the face of many obstacles and, in a sense, in competition with apprentice training. Training by experience, or by what was called the apprenticeship method, had been developed on an extensive scale by family welfare societies and by a few children's agencies. However, with the increase in the number of professional schools, apprenticeship training has markedly diminished. Thus, this comparatively new profession has followed somewhat the experience of the older and more well established professions.

The curriculum of a school of social work includes both classroom and field work instruction. A few schools also maintain an organization for social research as a part of the educational program. A minimum first-year curriculum has been accepted by the American Association of Schools of Social Work and must be offered by all new schools applying for admission. While certain schools of social work started wholly or partly on an undergraduate basis, the majority of curricula are now offered at the graduate level, and by 1939 all schools within the Association must offer a two-year graduate program. A few of the schools offer a curriculum leading to the doctor's degree. Since 1935 the regulations have required that all new schools applying for membership in the Association must be a part of a university or college approved by the American Association of Universities. While there seems to be agreement among these schools as to the importance of the social sciences to professional preparation, as yet there is no rigid adherence to a uniform pre-professional sequence comparable, for example, to that of the pre-medical requirement. In 1937 the schools adopted a report which recommended that psychology, political science, economics and sociology be recognized as the pre-professional subjects most closely related to the social service curriculum.

Due to the expanding public social services and the large expenditures on the part of Federal, state and local governments for social welfare purposes, the demand for adequately qualified workers has greatly in-

creased. During 1935–36, 10,174 students were registered in the Association schools as contrasted with an enrollment of 6,039 students in 1930–31. During 1937, the Association and the schools co-operated with the United States Children's Bureau and the Public Assistance Division of the Social Security Board through the Advisory Committee on Training appointed jointly by the two Federal agencies. Special attention has been given to the development of more adequate facilities for the training of rural child welfare workers and to the need for study of evaluation of the present courses and field work instruction, in relation to the administration of unemployment compensation and the public employment offices, old age benefits, public housing and other governmental programs. While those in charge of professional schools for social work indicate that there are still certain weaknesses and gaps in various school curicula, in general, both the content and quality of classroom and field work instruction have been raised to keep pace with the growing body of scientific knowledge made available through research and publication.

NOTE: For Library Education see article "Libraries," pp. 964–969.

VOCATIONAL EDUCATION

By L. H. DENNIS

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GENERAL

Rapid developments in the field of vocational education in the United States during 1937 emphasized the increasing popularity of occupational training for American youth. This increased popularity is due to a developing consciousness on the part of the American public relative to the purposes, possibilities, and actual developments in this important phase of the program of public education.

The passage by Congress in the spring of 1936 of the George-Deen Law had much to do with bringing the program of occupational training to the attention of the public. The provisions of the George-Deen Law became effective July 1, 1937. Congress, by an overwhelming vote in 1936, definitely provided for a substantial increase in Federal funds to be available for the program of vocational education.

In the 1937 session of Congress, the Committee on Appropriations of the House of Representatives received a recommendation from the Bureau of the Budget totaling only $3,000,000 for vocational education under the George-Deen Act. This recommendation of the Bureau of the Budget was probably due to the influence of the President's Advisory Committee on Vocational Education. This Committee, when it began its deliberations, was very evidently uninformed relative to the status of the vocational education program in the country at the time and was also unaware of the plans that had been made for the extension of the program. It became apparent later on that the Committee, or at least many of them, became informed relative to the situation. This undoubtedly caused a distinct lessening of the opposition from this source for the provisions of additional funds for vocational education.

DELAY IN RELEASE OF FEDERAL FUNDS

In spite of the fact that the Bureau of the Budget recommended only $3,000,000 for the year beginning July 1, 1937, under the provisions of the George-Deen Law, both Houses of Congress, by overwhelming votes, provided for an appropriation of over $14,000,000, the full amount provided in the bill.

Notwithstanding the very popular demand for these additional Federal funds for vocational education, for

some reason the funds were not made available to the various States until late in the fall of 1937, although the first allotment of one-half of the funds for the year were due July 1, 1937. This long delay in the releasing of the funds and the uncertainty that prevailed because of the delay, created an unfavorable impression in the country and caused the very definite postponement of many of the plans for the further development of the program in vocational education. The announcement by the President, that only so much of the funds would be released as could be used wisely, and would be made available, left considerable doubt in the minds of school administrators as to the intention of the Administration with respect to these funds. This caused the postponement for at least a year, and in some cases two years, of some of the developments in vocational education that would have taken place during the school year 1937–1938.

When the Federal funds for vocational education under the George-Deen Law were finally released late in the fall of 1937, it was then too late for state legislatures and local school districts to make arrangements to match these funds and to make plans for their use during the current school year.

In recording the developments in vocational education for this period, it is necessary to make the above explanation in order that the records for 1937 and 1938 may be correctly interpreted in the light of what appears to be a substantial increase in available funds for the program of vocational education. Without such an explanation, it might appear from the records that a very small development followed the availability of a substantial increase in funds. Another wrong interpretation might be that these funds were not needed, for undoubtedly a substantial amount of the funds available for the current year will be returned to the Federal Treasury unused owing to the lateness of the release of these funds. The various state departments of education and the local administrators of schools throughout the United States cannot be held responsible for the lack of use of these funds.

TRADE SCHOOLS

In spite of the uncertainty as to the time and amount of the availability of the George-Deen vocational education funds, the country has witnessed a very definite extension and broadening of the program of vocational education during 1937. New trade schools were announced for Wilmington, Del.; Philadelphia; Toledo, O.; Fort Worth, Tex.; and Chicago. Many new occupational training facilities were developed in the vocational schools of Boston, New York City, Buffalo, St. Louis, Los Angeles, and in many other centers.

Over 3,000 youth were trained for definite occupations in one trade school alone, the Frank Wiggins Trade School of Los Angeles, in 1937. The average age of those receiving this training was over 22 years. A Diploma of Trade Proficiency, the final and highest award of the school, is not granted by the school until the student has completed a minimum of six months successful experience in the trade for which he was prepared.

DEVELOPMENTS IN OCCUPATIONAL ADJUSTMENTS

Chicago is planning for a reorganization of its secondary school system. Dr. William H. Johnson, the Superintendent of Schools of Chicago, points out, as did his predecessor, that 85% of the pupils in high schools need definite assistance in making their occupational adjustments. This vast majority of the high school army endeavors to enter employment upon leaving the high school. Many of them leave the high school before completion of the entire high school curriculum. Superintendent Johnson feels that if more definite provision is made for giving assistance to these pupils in helping them to make their occupational adjustments and in preparing themselves for useful service in life, that larger numbers of them will be induced to remain longer in high school. One of the important by-products of satisfactory vocational training is the longer retention of

VOCATIONAL TRAINING OPPORTUNITIES

(Frank Wiggins Trade School, Los Angeles)

Aircraft Drafting and Design
Alteration of Women's Clothing
Architectural Drafting
Architectural Industrial Design and Detail
Automobile Electricity
Automobile Repairing
Body and Fender Reconditioning
Bricklaying
Carpentry
Commercial Art and Advertising Illustration
Commercial Lettering
Commercial Radio
Costume Design
Dressmaking
Electric Elevator Operation
Electrical Wiring & Equipment
Furniture Upholstering
Hairdressing and Cosmetology
Hand Composition
Heating and Ventilating
Industrial Office Practice
Janitor Engineering
Linotype
Mechanical Drafting and Machine Design
Mill Cabinet
Millinery
Monotype
Painting and Decorating
Pamphlet Binding
Plastering
Plumbing
Power Sewing
Pressing and Spotting
Presswork
Private Switchboard Operation
Radio Service and Mechanics
Sheet Metal
Sign Painting
Soda Fountain Service
Tile Setting
Tool Design, Jigs and Fixtures
Trade Cooking
Waitress Work
Welding
Window Display

(Emily Griffith Opportunity School, Denver)

Air Conditioning
Arithmetic, Business
Arithmetic, Shop
Armature Winding
Auto Mechanics
Auto Starting, Lighting, and Ignition
Baking
Beauty Parlor Trade
Blue Print Reading
Bookbinding
Bookkeeping
Bricklaying
Carpentry
Chemistry, Shop
Civil Service
Clay Modeling
Dictaphone and Ediphone
Drafting, Architectural
Drafting, Mechanical
Electricity, Applied
English, Business
Estimating
Filing
Home Economics
 Children's Clothes
 Clothing Construction and Rebuilding Old Clothes
 Costume Design
 Dressmaking
 Pattern Making
 Handwork
 Interior Decorating (Beautifying Homes)
 Consumer's problems
 Easy Guest Meals
 Easy Meals for Business Women
 Economy Meals
 Everyday Foods
 Family Education
 Meat Cookery
 Nutrition
 Unusual Foods
Machine Shop
Millinery
Mimeograph
Multigraph
Painting and Decorating
Plumbing
Printing
Radio Broadcasting
Radio Mechanics
Salesmanship
 Auto Accessories
 Cosmetic Demonstrating
 Food Demonstrating
 Ready-to-wear
 Real Estate
 Retail Lumbering
 Retail Millinery
 Retail Shoe
 Speech for Retailing
 Store Management
Sheet Metal Apprentice
Shoe Repairing
Shorthand
Showcard Writing
Telegraphy
Tourist Service
Typewriting
Welding, Acetylene
Welding, Electrical
Welding Lecture Work

youth in high schools and their exposure to many educational influences that would not otherwise be brought to bear upon them.

The reorganization of the Chicago High Schools is an evidence of the changes already beginning to appear in the secondary school program of the country. The school authorities of many cities are quietly but earnestly reviewing the philosophy, program and methods of their high schools.

It is surprising to note the great

variation in the high school offerings of various cities. In some of our cosmopolitan centers, effective vocational education has been in operation for 20 years, while in some other cities the school authorities are just now beginning to look into the need for training that will assist youth in making occupational adjustments. The following list of vocational training opportunities offered in the Frank Wiggins Trade School of Los Angeles, and in the Emily Griffith Opportunity School of Denver, will give some indication of the remarkable progress made in recent years in the field of vocational education in our public secondary schools.

RAISING OF VOCATIONAL TRAINING LEVELS

Washington, D.C. which, in recent years, has limited vocational training to over-age and problem boys and girls is now making a study of the possibility of providing occupational training for youth of high school age and ability. Other cities are making similar studies.

It has been the common experience of vocational training to find itself housed in the basement or in some equally unwanted space in the high school building. Usually vocational training has been inaugurated to take care of those who have been labeled as unfit or incapable of pursuing the usual academic training which was typical of our early high school development. Because of this inauspicious start, vocational training has had quite a struggle to become respectable in the educational world.

Gradually, educators have come to recognize that there are several levels of occupational instruction designed to meet the needs of different groups of youth. For the backward, over-age and mechanically minded group vocational training will continue to be provided as will the specific vocational training courses in colleges and universities provided for those who desire to secure the theoretical knowledge and the skill that are characteristic of certain skilled occupations, such as the surgeon, the dentist, the lawyer and other similar groups. In between these two groups lie the great masses of American youth for whom adequate vocational training opportunities will no doubt be developed before long.

EXTENSION OF EDUCATIONAL PROGRAM

The fact that over 1,000,000 youths had access to day, part-time and evening vocational courses during the year, is clear evidence that the vocational education program is already under way in America. Thousands of capable, intelligent high school students of senior high school level are now enrolled in vocational training classes of their choice. In some cases 10% of the enrollment in vocational high schools consists of high school graduates, who upon completion of their high school courses, have entered upon specific vocational training leading to employment. The secondary school is beginning to reach out into that great area of youth that has previously been served neither by the high school nor by our colleges and universities.

It is significant to note that 1937 saw the reorganization of many vocational schools on a senior high school basis. Even the names of many trade schools have been changed so that the name indicates the senior high school status of the trade school. Some of these schools are now known as trade high schools, technical high schools, vocational technical schools, or vocational high schools.

CONCLUSION

It is becoming clearly evident that there must be a definitely co-ordinated system of vocational guidance, vocational training, placement, follow-up and retraining if the secondary schools are definitely to function in assisting individuals to make their occupational adjustments and readjustments. Here and there, all over the country, are definite contributions in certain phases of the service just indicated. The year 1937 has brought out many statements to the effect that these services must be co-ordinated and made much more effective as a complete service.

The year came to a close with an

unusual volume of pronouncements, addresses and magazine and newspaper articles, dealing with the needs, possibilities and operation of vocational education. Not all of these statements were based on sufficient information or knowledge of the situation. It may be said that 1937 was especially significant because of the marked increased interest in vocational training and occupational adjustment.

ADULT EDUCATION

By Frank M. Debatin

Dean, University College, Washington University

GENERAL

The year 1937 witnessed a greatly increased activity in adult education. A number of new features were introduced in restricted areas and other innovations were made more widely or even on a national basis. Behind or beneath these there continued to be those rather well established and accepted practices of adult education which have for many years found homes in a great variety of institutions. These have grown, expanded and taken on new ways and procedures, but fundamentally they are serving millions of adults in very important portions of their lives. Such are the extension divisions of colleges and universities, the agricultural extension services of the U. S. Department of Agriculture, the vocational, industrial and home-making activities (recently given added impetus by the passage of the Deen Act), the evening sessions of public schools, general lecture programs, readers' advisory service in libraries and a dozen or more others found in church, labor union, political party or women's or men's clubs. In so far as these produced especially notable achievements in 1937 they are listed below, and it is appropriate to indicate the changes in emphasis and attitude, the increased degree of influence and the wider acceptability given to the work in all these branches during the year.

There are also certain persistent problems in adult education which from year to year change their direction or even achieve temporary solutions, but yet they always return in a dual capacity, as obstacles and as spurs. How to reach a wider clientele than has been so far the case and to do it with special attack upon the thinking of the group who are as yet not far advanced in formal education nor economically fortunate? How to provide programs which will be manifold and will serve as stimulation to further reading and study without laying paramount emphasis upon the traditional advancement but avoiding none the less a meandering, fitful hope toward achieving a vague goal! How to provide teachers, leaders and administrators with sufficient vision and understanding to cope with these problems on a full-time life-work basis? How to finance adult education? These are foundation questions on whose answers heavy burdens will rest in the future as in the past. The year 1937 contributed a larger share than usual of valuable discussion and practical guidance in the solution of these problems. But the questions cannot yet be laid aside as happily answered. In the following paragraphs there are many indications of the earnestness with which these queries are being considered and of the approaches which are being made toward functioning solutions.

As a whole, however, the year was outstanding in several respects. The numerical growth alone would be sufficient to account for the more enthusiastic and hopeful outlook which is widely evident. The adult activities of the W.P.A., the call by industry for more men and women with better skills, and the general

ferment of intelligent social consciousness contribute to this widening of the adult horizon.

Again this buoyancy of feeling has either produced or been produced by the addition of new ventures in the adult field and the conscious expanding of others. The use of the forums as a method for making citizens aware of a multitude of important politico-social problems, the use of the radio as an educational advancement, the increased reading of better magazines and books, the introduction in countless places of the principles of guidance for the advancement of the individual, the greater realization of the heavy responsibilities of the home and of parenthood, these are some of the significant areas in which novelty and increased emphasis have combined to give greater efficiency to adult programs and to furnish new outlets for education, educator and educated.

The forming of the Federal Radio Education Committee, the establishment of the Federal-maintained forums, the new study programs of the American Association for Adult Education, the stimulating activity of the Adult Division of the National Education Association, the vigor of the National University Extension Association, the intelligent planning of the American Library Association, —these and many others are the channels through which this enhanced spirit, this re-direction of adult programs toward "the whole man" and this interpenetration of the need of individual, community and professional educator have particularly made progress this year.

UNIVERSITY PARTICIPATION

There are two national associations dealing with problems of adult education in the universities. One is the National University Extension Association comprising some 50 institutions of which approximately 40 are either state or municipally supported. The other is the Association of Urban Universities including most of the institutions in metropolitan areas. The extension services offered by these are thoroughly inclusive and, while there is little variation from year to year and not much that is spectacular, there is steady and constant growth in supplying better adapted programs, both formal and informal, for a large miscellany of interested adults. For the urban university the satisfaction of this expressed need of mature persons for guidance and helpful instruction in their economic, personal and social backgrounds has become a double responsibility. On the one hand it has made these universities more fully aware of the growing interrelation of "town and gown" and on the other it has added to the large established university function of the discovery and preservation of knowledge, that further function of providing more adequate dissemination of that knowledge for actual social and individual growth and benefit.

"College Aptitudes of Adult Students" and "Comparative Abilities of Extension and Non-Extension Students of a Large Urban University" (his motives and his abilities and his social activity as his intellectual background) were published in the *Proceedings* of the Association of Urban Universities (Dean Roscoe M. Ihrig, Carnegie Institute of Technology, secretary). The proceedings also contain (pp. 77ff.) brief statements of special features to be found in the programs and appraisals of the member institutions. In the discussions at the 1937 annual meeting were included "Contemporary Art in Relation to University Education," "A Century of University Extension at Harvard" and "City Life and the Preservation of Civilization."

The following are items of interest selected from the programs of institutions belonging to one or both of these national associations: (1) University of Akron—organization of a new Division of Adult Education with a program of short non-credit courses at small fees; (2) University of California—the conducting of week-end institutes in San Jose, Sacramento, Santa Barbara, Oakland and Santa Rosa in co-operation with the Public Relations Committee of the

Association of California's Executives in Public Welfare; the publication of student work in a class in Verse Writing under the caption Spring Harvest (one poem was accepted by *Scribner's Magazine*); special clinics for general medical practitioners and dentists; (3) University of Cincinnati—addition of a second popular Lecture course supplementing the series already offered for business men and women; (4) Columbia University—reference is made elsewhere to the Readability Laboratory in Teachers College; withdrawal from the field of correspondence study; expansion of general interest courses including orientation or omnibus courses in several major fields such as literature, science and art; service to industry and business in its need of special training courses for junior and senior executives; (5) University of Denver—a program of conferences on the improvement of teaching and establishment, for somewhat similar objectives, of the Teachers' Trek; (6) University of Minnesota—the establishment of the Center for Continuation Study, operating through a series of schools and institutes, adapting itself to the needs of special groups, conducting its activities and housing its students in its own building; (7) University of Nebraska—development of studies for help in Workers' Education, expansion of the program in supervised correspondence study especially with reference to use of the material in C.C.C. Camps; (8) New York University—the publication of an Adult-Study catalogue (eight issues yearly) in which are listed books and monographs bearing directly upon adult education and others in related fields together with a very brief summary of content and relationship; the publication of miscellaneous bulletins designed to assist teachers and administrators, including thus far "How to Study," "Effective Group Discussion" and "Publicity for Adult Education"; a reading clinic for the diagnosis of reading difficulties and remedial treatment; the Radio Workshop, experimentation in educational broadcasting with regard to content and techniques, leadership training and the production of adult education broadcasts; (9) University of Rochester—introduction of work in choric Speech and co-operation with the City of Rochester in their program of police training; (10) University of Toledo—expansion of the program of the University's Opportunity School in co-operation with the WPA; provision for practicing attorneys of a non-credit course in law lectures and discussions of present day international relations for large groups of citizens; (11) Washington University—inauguration of a vocational guidance clinic for adults with special reference to serving individuals who desire help in understanding their placement problems and to serving industry and business when it needs help in a variety of personnel problems.

PUBLIC SCHOOLS

A very marked growth in the activities of the Adult Division of the National Education Association is in part due to two factors: (1) that there has been closer correlation with the adult activities of the Works' Progress Administration and (2) that public school administrations throughout the country are becoming increasingly aware of this newer force in education. It is, of course, appropriate that the national organization which represents public school activities in its other manifold relationships should become the spearhead and clearing house for this phase also.

The Adult Division is directing its attention toward three objectives: (1) giving adequate and representative publicity to the work which is being carried on not only in the public schools, but also by other recommended groups and institutions; (2) developing literature which will be helpful primarily to its own membership, though not exclusively so, and (3) fostering legislative programs both Federal and local in support of adult education. In furtherance of these things it has continued the publication of its *Adult Education Bulletin* begun in June, 1936. In each of its

four issues it includes one lead article which frequently gives wider scope to the significance of its utterances. "Social Security" in the June number and "The First Fruits of the Industrial Revolution" in the October number represent this type of contribution. There is usually a technical article dealing with the elucidation of some special feature of the work. The "New Forum Leader" and "The Social Science Workshop" are articles which represent this aspect. In addition there are notes from the classroom and from the student who is, in this case, the consumer and ultimate judge of the validity of the entire program.

The Adult Division has held two meetings of national scope, one with the superintendents in New Orleans and the other as part of the annual convention of the National Education Association in Detroit. At the latter meeting the sessions of the Division were fully integrated. The general topic was "A Philosophy for Adult Education." A specially selected committee acted as a discussion panel for this topic after a comprehensive presentation of it by Lyman Bryson. The group then divided into three sections and on each of the following two days discussed a critique of current practices in Adult Education and next steps in Adult Education.

The group which followed these discussions and participated in them carried through the several meetings. The enthusiasm and interest were doubtless in part due to the successful membership drive which had practically doubled the numbers of those who are now actively aware of adult education as a factor in public school programs. The Division also prepared a Bibliography on Adult Education which shows many titles in closely allied fields.

Another activity is the committee on Methods and Techniques which in conjunction with the National Commission on the Enrichment of Adult Life is completing one study for publication before embarking upon a broader and also more detailed study during the next several years. This newer study will continue the attempt to devise practical programs, syllabi and suggestive guides for the beginner and also the more experienced teachers and leaders in the field.

Finally, the Adult Division is giving attention to legislative support, primarily in the interest of the teaching of Citizenship. In this are included provision for the further elimination of illiteracy, the teaching of English to non-English speaking groups and the propagation of programs generally listed as Americanization. In this last connection there is close co-operation with the National Council on Naturalization and Citizenship.

AMERICAN ASSOCIATION FOR ADULT EDUCATION

The American Association for Adult Education which during 12 years acted as clearing house for the various adult agencies seeking guidance on a voluntary basis initiated this year a series of studies under the general heading, The Social Significance of Adult Education. This program is to be carried on over a period of five years as now planned and is to deal with specific phases of adult education, certain related and contiguous fields in the social-economic-educational realm, and correlations of adult work affecting several types and agencies concurrently. It is not the purpose of these studies to make exhaustive investigations of all their aspects nor even to go completely through the factual material of any of them. Rather it is intended that there be judicious samplings with many subjective reactions of investigator, purveyor and consumer of adult education. It is believed that in this way many opinions as well as facts regarding the work now going on will come to light with possible results in modification, expansion or even elimination. There is no serious doubt being raised as to whether adult education is socially significant, but the object here is to find the proper relationship of this newest science of society to other educational activities and to social welfare, recre-

ation, community organization and a long list of other similar but well-established social practices. Three of the studies have already been published: Mary L. Ely, "Why Forums?"; Frank Ernest Hill, "Listen and Learn"; and Dorothy Rowden, "Enlightened Self-Interest." Four other studies are in press: Gaynell Hawkins, "Adult Education in the Social Settlement"; Alvin Johnson, "Adult Education in the Library"; T. R. Adams, "Museums and the Adult Learner"; and Willem van de Wall, "The Music of the People." Three or four other studies are in the investigation stage.

The American Association for Adult Education has also given much thought and considerable experimentation to the holding of regional conferences. In part these are to substitute for annual meetings, but more especially they are to supplement them. Activities in the adult field are growing so rapidly and the workers have become so numerous that one annual exchange of ideas and experiences is insufficient and not wholly representative. Minneapolis had the first of these conferences, followed by others in Spokane, Trenton, Cincinnati, Denver, Boston, Lake Geneva (Wisconsin) and Chapel Hill. Conferences in Los Angeles, Toledo and Pittsburgh are in preparation. So far these conferences have been warmly received and there has been some indication that regional councils of adult education may develop, giving added strength and unity to the growing number of city councils. There are, however, many fundamental questions to be studied and answered before the exact nature of this next step becomes clear. What is a region, how frequently should regional groups meet, what should they attempt to do and a score of other problems face the adult educators in the years ahead.

Many other activities of the American Association for Adult Education go forward also, implemented by newly developing phases of the work. The main feature of the Association's program which is being diminished deals with the subsidizing of individual or local projects. The introduction of the two new features described in the preceding paragraph is giving the Association a clearer position of direction and guidance for the program being carried on throughout the country and by a widely varied group of organizations.

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN

The activities of the American Association of University Women are in large part closely related to adult education and in some instances are exactly that. Their local chapters deal with topics of current moment from a significantly educational viewpoint. The addresses given at the annual meeting, the articles published by members, and the books and pamphlets sponsored, published and distributed by the Association, are all intended for use by study groups, either at their own branch meetings, forums and conferences or those of any who wish to avail themselves of these materials for such purpose. In two years (1935–37) some 30,000 publications have been distributed and an average circulation of the *Journal* has exceeded 50,000 copies monthly. Under the general head of Educational Standards and Trends, there are to be especially noted study groups and community activities in Educational and Vocational Guidance, Radio Projects and Library Projects. Under the general head Child Development and Education for Family Life there are among many others, Parent Education Projects, Family Relations, Household Economy, Mental Health and Social Development. In International Education as well as in the study groups in Social Studies there are programs distinctly geared for adult consumption and adapted to the needs of the alert progressive college woman who has a vital and intelligent interest in her community's problems. The Association also gives thought and attention to such types of adult education as are represented by Alumni Education. As a matter of fact the Association's activity is almost far

reaching enough to change the designation of this last adult program to permit the use of the feminine adjective. Many of the publications referred to above have the professional authorship of outstanding workers in the several fields.

THE LEAGUE FOR POLITICAL EDUCATION

While one of the outstanding contributions to adult education made by the League for Political Education is its radio program known as America's Town Hall of the Air, there are signs of newly unfolding interests of wider area suggested by its activities. Housed and co-operating with the Town Hall there is here an interrelation which seems to put this particular agency for informal adult education on the crossroads of present day trends in social-economic affairs, international happenings, and the arts.

As far as the radio program is concerned a recent study indicates that 34% of the listeners replying to a questionnaire believe that their opinions have been changed through listening to this program and 90% of those replying stated that they followed up the discussion with relevant reading. This the Director of the League attributes to the policy of presenting two or more conflicting views on controversial public questions followed by questions from the audience. This audience participation in the past year has been so extended that groups listening in at distant points could be "cut in" and actually become a speaking member of the program. These discussions are also published in full, but quite inexpensively.

In the non-broadcast lectures and concerts of the Town Hall, there has been an increased development of the forum procedure for the lectures and a growing widening of the appreciative circle for the concerts. With a general lecture program a radio program, a library, a book store, conference rooms used for popular seminars, a radio department and an extension division, this may in many respects become a model for future emulation elsewhere and also a throwback to the days of young America when the early settlers congregated for all their social and intellectual life at the town hall. That this one is only a few steps from Times Square in New York should, as its Director says, be "one of the healthiest signs for our future" at a time when "democracy [is] being challenged and our peace threatened." Adult Education programs where understandingly conceived have similar objectives everywhere.

PARENT EDUCATION

"Parent Education," according to Dr. Ralph Bridgeman, "is the Adult Education phase of a movement for the application of science and education to family life." As such it commands the attention of large numbers of persons whose interests are banded together in Parent-Teachers Associations, Congress of Parents and Teachers, Child Study Association and the National Council of Parent Education. Nursery Education as well as Parent Education forms a major activity of the adult program of the W.P.A. In schools, colleges, churches and clubs study groups and classes are formed to investigate not only the matters pertaining to parenthood, but to study child psychology, the relation of the family to the community, the importance of home making with its attendant ramifications and the significance of the emotional in modern civilization. The depth of the roots of this phase of adult education is so great and the roots themselves are so firm and wide spread, because parent education deals with fundamentals of human living.

To the practice of forming study groups have this year been added two other devices. Counselling interviews in which the individual is enabled to discuss his worries with an advisor and during which with increasing frequency the advisor visits the home are the outgrowth of the work of the National Council of Parent Education as well as the Adult Education of the W.P.A. Particularly is this type of education being fostered in rural areas. Here it is found to be

far more practical than other methods tried until now.

The second expanding device is the growing use of councils either in urban or rural areas. There are also some of state-wide coverage. The publication a year ago of a monograph, *Community Organization of Parent Education,* followed by a study entitled "Education for Family Living in Rural America" have largely furnished this stimulus. Both are the work of the National Council which has also added two other recent studies—"Parent Education and Psychoanalysis" and "Marriage and Family Counselling." Serving as a bureau of information and as a builder of programs such councils are both for participating parents and professional workers a means for forging "a better life for tomorrow out of the knowledge and skills of today."

Iowa University, the University of Minnesota, the American Association of University Women, and the unnumbered women's clubs, federated and independent, are, in addition to the organizations already mentioned, responsible for a growing literature, increased opportunities for training lay and professional leaders and new and helpful programs broadcast over local stations and national hook-ups.

RADIO AND FORUM

The development in two techniques used by adult education, namely, radio broadcasting and forum discussion, has been outstanding during the year. They are here treated together because at many points they are interrelated. Both are being energetically supported by the plans of the U. S. Office of Education. In at least one program, "America's Town Hall of the Air," a forum is broadcast. Each of these techniques is to be conceived as a means for disseminating information and understanding about social-civic topics primarily. The Radio has become universally accessible and enables persons of widely differing opinions and objectives to speak to large numbers or on the other hand to hear concurring or opposing ideas and propositions from a wide assortment of speakers. Where forums exist on a sound basis of "informed leader, planned program and participating audience," there is according to some a reversion to practices of the founding fathers, but in any event in accordance with lay and expert judgment alike a forum is intended to be a meeting of many minds during which the growth of tolerance is perhaps more important than the mounting mass of particular and factual knowledge possessed by individuals.

The radio achievements of the year began really with the first national meeting on educational broadcasting held in Washington, D.C. Dec. 10–12, 1936. This was an outgrowth of earlier happenings from which the Federal Radio in Education Committee was set up with the U. S. Commissioner of Education as chairman and some 40 experts drawn from education, industry and government as members. This is an arm of the Federal Communications Committee and represents an attempt to improve educational broadcasting facilities and programs from each of its three major angles. As a result the year showed an increased willingness by the stations to add meritorious educational programs and to present them in most instances as a service of the station. It has grown clearer also that such programs in the main are more effective when they are worked out on a local or perhaps regional basis and that only in few cases are educational programs on a national hook-up adjustable so as to arouse a proportionate response.

The Radio Workshop set up in cooperation with New York University is one effort by this Federal program to improve technique. Script writing and the concurrent establishment of a library service of scripts and transcribed records for use of organizations throughout the country comprise another. Five programs sponsored by the U. S. Office of Education and sent out over a national hook-up are further concrete evidence of what is being offered both for the general school population but equally for adults. The programs are simple

in structure, well authenticated in material and valuable for those who have no specialized interest in the subject. The programs are facing the same question which has confronted many others,—What to do in the second year,—whether merely to repeat with variations or to add material requiring more advanced background for understanding?

The Committee on Radio by Education, co-ordinating the efforts of some eight or more national educational associations, is pushing forward its programs of regional organization, and a region consisting mainly of Wyoming and Colorado is about to launch an experiment in this direction. The committee is also sponsor for an official allocation of a definite percentage of the air channels to education.

The National Advisory Council on Radio in Education, correlative agency in adult education with the American Association for Adult Education, is undergoing a change in organization. After completing several years of planning and sponsoring programs of high excellence it feels that it has made its contribution in this area and it is now readjusting itself to the changes which are coming rapidly in educational broadcasting and which have already been indicated. It has several important pieces of research planned for the ensuing years.

The University Broadcasting Council in Chicago, the Ohio School of the Air, America's Town Hall of the Air, the broadcasting by colleges and universities, often over their own stations (achievements in Wisconsin and Illinois are noteworthy)—all those and numerous unchronicled though functioning programs are adding to the adult's knowledge and appreciation of his world.

Nineteen Federal forums were in operation from February to July, 1937. With a somewhat smaller budget the plans formulated for the fall of the year deal entirely with the founding and development of forums in new areas, especially those 30 States in which so far no experiments have been undertaken. The study of audiences and of forum techniques looms large in the program also. The abandonment of the centers previously supported is not such in reality. In many of these the programs have so far justified themselves that local groups have taken over their direction and management. In others this is likely to happen also. Where there is insufficient interest for such local co-operation it is perhaps logical to suppose that fostering them is useless. In all cases again the program and the speakers are to be chosen by local communities. The lot of the speakers is, however, to be improved and the dependability of their employment increased by having a more definite schedule for each. Now a speaker can accept his appointment with a longer view of continuous engagement ahead of him than was true heretofore.

Other forum and lecture projects go forward with little change calling for special note. The Des Moines experiment which this year came to the end of its support by the Carnegie Corporation has found a way to continue through local co-operation and sponsorship. The program will be a bit less ambitious and will widen its scope in subject matter by adding the arts and also science. Here again the year has revealed in several centers that, while the social-civic may be the correct foundation on which to plan forum success, the audiences after a while become saturated to such a point that new speakers have little to add to their well-informed understanding. It is therefore necessary either to advance to more technical material (note what was said about radio programs) or to widen the circle of subjects. The latter is more appropriate and consistent with the major programs of the forum technique.

LIBRARY AND READING

For more than a dozen years the American Library Association has pioneered in adult education with the ultimate creation of an Adult Education Board in charge of an Adult Education Specialist. The most recent results of this action are to be

found in the following developments. A growth in readers' advisory service in the larger libraries and the introduction of informal or part-time advisory service in the smaller libraries are relating the libraries more closely with the wider educational trends of the community. Publications thus far issued include "The Library in the TVA Adult Education Programs" and "A Study of Reading in Relation to Forums." Similar studies will relate themselves to parent education, rural adult education and agricultural extension. Two others, The "Library and the Radio," and the "Bibliography of Reading Interests and Habits, 1930–1936" are in press. In the field of education for librarianship three new courses emphasizing the place of the library in adult education and *vice versa* have been offered by the School of Library Service at Columbia University by a faculty member who is also a member of the American Library Association Adult Education Board. In August, 1937 the University of Chicago Graduate Library School held a two weeks' institute for librarians in service and with entire attention focused on adult education.

The Readability Laboratory at Teachers' College, Columbia University, is continuing the work begun in the previous year. It is approaching the point at which in all probability actual exemplars of its study and planning may soon be expected in print. The success of this activity will provide "readable books on serious subjects for the average American Citizen." Such a service will be especially helpful for readers' advisors in the public libraries and for forum leaders who wish to recommend further reading of such quality and difficulty as can be used by a miscellaneous audience. There would be broader uses for books adapted to adult students whose reading experience has been limited and not long continued. In fact it is believed by many that the fate of the Adult Movement may rest upon the degree of improvement which will occur in general reading ability as well as the materials made available toward this end. Lucid writing and quality of appeal are basic here, though technical make-up of the books carries much added importance.

The pamphlets of the Public Affairs Committee in Washington, D.C. and the Headline Books of the Foreign Policy Association are designed to combine "readability" with timeliness of subject matter. Charts and illustrations form an integral part of the reading matter of each of these series and the text is made authoritative and forthright in character.

THE EDUCATION OF NEGROES

By William Anthony Aery

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GENERAL

Leaders in education, white and Negro, believe that a comprehensive and adequate system of education among American Negroes will reduce race conflict and capitalize as an asset the Negro population of over 12,000,000. Professor Otto Klineberg of Columbia University has said: "Racial conflict is not a disease in itself, but a symptom of a disease. It is a disease of the whole economic body with the dominating majority using a minority group as a scapegoat on which to blame all the ills."

Federal, state, and local governments in 1937 gave attention to the educational needs of the vast Negro population, especially in the Southern States. The General Education Board supported the idea of aiding an important private institute by giving $500,000 to Fisk University to match $500,000 given from the Rosen-

wald Fund and by expressing its willingness to match other contributions up to $1,500,000.

The Chicago Defender (Robert S. Abbott, owner) criticized the Negro schools of the South (see issue of August 28, 1937) for their failure to prepare students properly for further study in Northern institutions.

Some 25,000 Negro students attend schools restricted to Negro applicants. Many Negroes who are ambitious to get an education are like thousands of white students—"without adequate inspirations, motives, or a sense of direction," according to the Rev. Herbert King of the Y.M.C.A. general staff. It is, however, to educated Negroes that the country must continue to look for leadership in establishing satisfactory race relations and in reducing fear, antagonism, and hatred. For this reason the right kind of Christian education for Negroes is essential and in reality it is being extended from Virginia to Texas and from Florida to Kentucky.

RURAL EDUCATION

Rosenwald Fund.—Since the Negro population is so large in the rural South, attention has to be focussed on rural education. The Julius Rosenwald Fund of Chicago (Edwin R. Embree, president) spent in one year approximately $700,000, chiefly on rural education and Negro health (see *School and Society,* November 27, 1937). During two decades the Fund helped to build for Negroes 5,357 schools in 883 counties of 15 southern States at a total cost of $28,408,520, of which the Fund contributed $4,366,519, while Negroes gave $4,725,871 and whites gave $1,211,975. The remaining amount—$18,104,155—came from public funds. The Fund is interested in producing better teachers for rural schools, better supervisors, better texts and materials of instruction, better salaries. This philanthropic enterprise spent in a year $205,000 to improve health facilities for Negroes.

One serious loss to Negro rural education was the retirement of S. L. Smith of Nashville, Tenn., after 25 years of service with the Rosenwald Fund. This man had organized and developed the rural school-building campaign. The so-called "Rosenwald Schools" employ 14,750 Negro teachers and care for 664,000 Negro children.

Georgia.—At Warm Springs, Ga., the Eleanor Roosevelt School for Negroes was dedicated in March. It was the final Rosenwald project. The building is a brick structure consisting of four classrooms, library, community room and auditorium. This school cost $16,000 with its equipment and six-acre site. It represents the hearty co-operation of whites and Negroes, of public and private financial support. It replaces a combined church and society hall which was used for school purposes. At the dedication addresses were made by President Roosevelt and Dr. Edwin R. Embree. Short talks were made by M. D. Collins, state superintendent of education, and Robert Cousins, stage agent of Negro schools. President Roosevelt referred to his discovery in 1924 that the young Negro principal's annual salary was only $300 and the salaries of his teachers were even less, and laborers, white and Negro, working on a contract for a golf course, were being paid 70 cents a day. He examined the causes of the cheap labor and found that five-cent cotton was chiefly responsible. Superintendent Collins has asked for an appropriation twice as large for education as in former years and a guaranty of a seven-month school term.

ELEMENTARY EDUCATION

Virginia.—The bulk of Negro children is found in the grades one to three of the elementary school. What is true, for example, of Negro elementary education in Virginia is generally true of the other southern States. The outstanding needs of the educational system in Virginia, according to Fred M. Alexander, state supervisor of Negro education (*Virginia Journal of Education,* May), are large attendance and improved instruction. Negro teachers receive very low annual salaries—$391 in the counties and $834 in the cities—which are barriers to decent living.

In Virginia there are 1,828 school buildings provided for Negro children —60% one-room, 24% two-room, 5% three-room, 11% four-room or more. Only 7% are built of brick, stone, or concrete. Virginia employs nearly 4,000 Negro teachers—11.4% have had less than one year of college training; 24% at least one year; 41.2% two years; 23.3% four years. The per capita cost of instruction in Negro schools was $13.56. The total value of public-school property for Negroes was $6,622,500. The average length of school term was 169 days. Negroes in Virginia constitute about 27% of the population. Supervisor Alexander made a plea for the liberalization of the curriculum; training for vocations; and the development of music and fine arts.

Florida increased the salary of Negro teachers 33% over the average annual salary of $494.80 which prevailed in 1935–1936; gave more consideration to the employment of two-year and four-year college graduates; required special training for teachers in elementary and high schools.

SECONDARY EDUCATION

Limitations.—In general, 15% of the secondary-school graduates go on to college and 85% find their way into the workaday world. This is as true of Negroes as it is of whites. While there has been an enormous increase in the enrollment of white pupils in the secondary schools, there are still thousands of promising white pupils who for a variety of reasons do not enjoy the advantage of secondary education. The plight of Negro adolescents who should have the advantages of good secondary education is even more serious.

Virginia.—Some facts for Virginia, based upon the report of Superivsor Alexander of the State Department of Education, follow: "There are 98 Virginia public high schools for Negroes. Fifty-two high schools are accredited, two are qualified, and one is certified by the State Department of Education. Forty-three high schools have not yet met the standards of the State Department of Education. In addition to the public high schools, there are eight private high schools accredited by the State Department of Education. Twenty-four counties are without high school facilities for Negroes. This is due, in part, to the small Negro population which is less than 10% in several counties. Where the Negro population is too small to make practical a county high school, definite efforts are being made to establish regional high schools for Negroes that will serve such counties. The curriculum offered in Negro high schools is largely traditional and academic."

Vocational Needs.—J. H. Binford (Richmond), a well-known city superintendent of schools, speaking before the Virginia Academy of Science, pointed out that of a white high-school population of 7,000 about 3,800 were in high school, while of a possible 2,000 Negro high-school candidates only 800 were in high school. Some 1,200 white boys and girls were headed toward college: 150 Negroes were headed toward college. To relieve the Negro situation in Richmond the Maggie L. Walker High School, in memory of a distinguished banker and business woman, is being built. This school will give adequate attention to meeting Negro vocational needs.

Negro Viewpoint.—The weaknesses of Negro secondary education were voiced by *The Chicago Defender* (Aug. 28, 1937) which said: "Our secondary schools in the South stress physical improvement instead of an intelligent emphasis on the quality of their teaching. If the faculty of these schools is made up of inadequately-prepared teachers, it is obviously the fault of the administration. Competent men and women cannot be induced to go South on contracts that guarantee them neither a reasonable tenure of office nor adequate compensation. . . . Many secondary schools operate on a seven-month basis. . . . All of the required subjects are not taught and the student receives only a smattering of those that are taught." These criticisms were fairly faced during 1937 by a number of Southern secondary schools for Negroes.

VOCATIONAL EDUCATION

Survey.—In 1937 the Federal Government, under the directorship of Dr. Ambrose Caliver, specialist in Negro education, U. S. Office of Education, completed a Survey of Vocational Education and Guidance of Negroes. It gathered information from some 200 communities in 34 States. Data were assembled from 400 high schools, 50 colleges, 100 evening and proprietary schools, 1,000 vocational teachers, 27,000 high-school students, and 20,000 persons who had attended or been graduated from high school. These data were collected by a qualified staff of relief workers, 35% of whom held the bachelor's degree, and 50% of whom had had one to four years of college education. Twelve workers held the master's degree. All of the 38 non-relief workers had had university training and six held the doctor's degree or its equivalent. That high-grade vocational training had been received by some Negroes is shown by the types of experience which some workers had had (see following figures): Teaching, 170; social work, 40; tabulating and statistical work, 115; stenography and typing, 85; filing, 213; research work, 246. Other vocations followed by three or more persons included: ministry, medicine, law, nursing, librarianship, insurance, and recreational work. In the Survey some 1,650 persons took part. The findings will be released through the U. S. Office of Education and will include a study of opportunities for medical education and its allied fields as well as a study of vocational education under the Smith-Hughes Act (work with adolescents) during the past seven years.

Institute Schools.—The American Church Institute for Negroes, under the auspices of the Protestant Episcopal Church, according to Director Robert W. Patton (*Southern Churchman*, June 19), helped to support schools in eight southern States. The Institute, incorporated in 1906, does not own any school. The property, totalling in value over $2,000,000, is vested in local boards of trustees with white and Negro members. These schools had nearly 200 "able and godly Negroes" as administrative officers and teachers, and 4,000 students. These schools train ministers and teachers. Dr. Patton said: "Every student is required, in addition to the work in the classroom, to do some useful work in the kitchens, the dining-rooms, dormitories, and in the shops, where trades are taught, or on the school farms, or in the gardens." The Institute and the schools hold endowments amounting to nearly $700,000 and are asking for $5,000,000 to continue their work.

Hampton Institute.—Hampton Institute received through Edward S. Harkness $100,000 to strengthen its Trade School. The money will be used entirely for replacement and strengthening of equipment, and for modernization of buildings and shops. Dr. Arthur Howe, president of Hampton, called particular attention to the importance of the work of the Trade School to Negroes at large, because of the general need of skilled mechanics and the new and expanding industrial developments in the South, as well as the demand for teachers of industrial arts in the general shops of high schools and of teachers of trades in schools and colleges. "This demand," said President Howe, "if adequately met, will increase the number of self-supporting citizens and the purchasing power of America. Hampton's philosophy is that of raising the level of the masses so that they can pay for the services of doctors, dentists, lawyers, and other professionally-trained leaders. On behalf of these Negro Americans, we face a challenge; the need is great, and the organization is available to make a vital contribution to our national welfare."

Relation to Industry.—Negro leaders, too, everywhere expressed the importance of giving the masses more opportunity of vocational preparation for life. G. R. Jordan, resident engineer of the Negro housing project near Hampton, Va., said: "Many Negroes today do not want to soil their hands and consequently are turning their backs on opportunities. Too many Negroes are looking for professional white-collar jobs. The Aberdeen project, built by our own race, is one

of the most efficient projects in the resettlement administration. When we can do really capable work and give a full day's work for a full day's pay, there is demand for us and no reason for discouragement."

ADULT EDUCATION

Virginia.—The Newport News Shipbuilding and Drydock Company of Virginia, in co-operation with the city board of education, furnished the funds—$50,000—for a modern and well-equipped Negro recreational center which was dedicated in February. It expressed appreciation of the faithful service of their Negro workmen. This center, with extensive playground area, is operated in conjunction with the New Huntington High School (L. F. Palmer, principal) which is modern in construction, progressive in curriculum offering, and ably staffed and managed. Here industry, labor, and the community are co-operating for the common good. Negro workers and their families find here a recreational center for use in leisure hours and their use of the entire plant has demonstrated the value of a sound, well-planned program of adult education which involves mutual understanding and mutual aid.

Aid to Farmers.—Another phase of adult education is carried on through farmers' conferences. The one at St. Paul School, Lawrenceville, Va., organized in 1902 to encourage Negroes to buy land, build better homes, churches and schools, to promote better race relations, to hasten Negro progress, held two large meetings during 1937 for instruction and demonstration in modern agricultural methods and the use of modern farm machinery. As a result of St. Paul's influence the Negroes in the "black belt" of Virginia are the most prosperous, progressive, and law abiding in the State. They own and operate 42,143 acres of land, valued at $705,830, and the majority of them live in comfortable homes with modern conveniences.

Consumer Co-operation.—Negro consumer education made some strides, especially in Gary, Ind., under the leadership of J. L. Reddix, a teacher in the public schools, who has played an important rôle in the development, since 1932, of the Consumers Co-operative Trading Company which has emphasized its educational program of teaching Negroes the value of co-operating with the Gary director of adult education. Negroes received instruction in the history and philosophy of co-operation as well as in the organization and management and co-operatives. The educational committee distributed widely a pamphlet on "A Five-Year Plan for Lifting the Social and Economic Status of the Negro in Gary." This adult education program of Negro co-operation in Gary emphasized (1) mutual helpfulness through self-help; (2) interracial goodwill; (3) consumer co-operation; and (4) active participation in managing a co-operative business.

HIGHER EDUCATION

Problems.—Higher education for Negroes includes all the problems that face white leaders and many more that arise out of the limitations of race and region. It demands intelligent reorganization, redirection, and financial support to be as effective as it should be if it is to minister to the changing needs of Negroes, North as well as South. John W. Davis, president of the West Virginia State College, in his study of the *Problems in the Collegiate Education of Negroes* (West Virginia State College *Bulletin*, June, 1937), summarized the judgments of 114 persons—Negroes, 98 and white, 16—who had had long and effective connection with the education of Negroes over a wide area.

Among the 364 problems in the higher education of Negroes, some of the more important ones follow: Training in the fundamentals of living; training students to think; racial diplomacy; living in a bi-racial social economy; educational and vocational guidance; specialization *vs.* concentration; teacher-training; graduate and professional training; value of denominational colleges; formulation of educational programs; funds for personnel, scholarships, and equipment; parent education; meeting in-

digenous needs; study of Southern problems; reorganization of curricula; meeting problems arising out of the depression; public *vs.* private institutions; study of social problems; extra-curricular programs; health education; selection of students; student-faculty relations.

Scholarship Societies.—Some 21 accredited Negro colleges reported organized scholarship societies (George W. Gore, Jr., in *School and Society*, Aug. 7, 1937) which admit juniors and seniors whose scholarship is distinctly superior. In general, these organizations follow the pattern of Phi Beta Kappa, are sponsored by administrative officers, and are co-educational. Greek and African backgrounds form a part of the ritual and symbolism. Membership does not exceed 10% of the senior class. There is a growing sentiment to form a national federation. The Association of Colleges and Secondary Schools for Negroes (V. E. Daniel, president) engaged in a study of these problems: (1) practices relative to matters moral, aesthetic, social, and religious; (2) health and parent education; and (3) occupational and citizenship opportunities of Negroes.

Self-Criticism.—Negro leaders realize the importance of studying the problem of higher education. Edwin D. Sheen of Livingstone College, Salisbury, N.C. (*School and Society*, Nov. 13, 1937), said: "Teachers in most Negro colleges are poorly paid. . . . Unqualified administrators, unprofessional teachers, aimless curricula are not peculiarly characteristic of Negro institutions. . . . Most teachers in Negro colleges have had considerable contact with the best white educators. . . . There is probably a need for a scientific investigation of the Negro institutions of higher learning to determine what they are trying to do, how well they are doing it, what obstacles stand in the way of realizing worthy aims, what to do about the removal of these obstacles. . . . This study might assist in increasing the opportunities of many young Negroes to secure an adequate and useful education."

Women.—College education for Negro women was advanced by the breaking of ground for a new residence hall at Bennett College, Greensboro, N.C. (Robert Jones, president). The building, constructed during the summer, cost $100,000. The money was given by Mr. and Mrs. Henry Pfeiffer of New York, who, in 1934, gave this college a dormitory and a central heating plant, and, in 1937, a science hall, costing $115,000. In short, this family gave the college $350,000 within three years. President Jones' work for Negro women points the way to what can be done by private institutions to engage in pioneering education and to complement the work of state institutions which, though receiving larger appropriations each year, are still severely handicapped in furnishing prospective Negro leaders.

Health Service.—During the summer the executive committee of the National Negro Student Health Association set up minimum standards of health service in Negro colleges. *The College Health Review*, which began in January, 1937, presented valuable material on fighting tuberculosis in the colleges and current literature on college hygiene.

HEALTH EDUCATION

Negro Health Week, April 4–11, was observed on a national scale. In 1913 the Negro Organization Society of Virginia, founded by Robert R. Moton, then commandant at Hampton Institute, demonstrated the value of a periodic campaign for cleaning up homes, lots, fields, and the community at large. Dr. Booker T. Washington, principal of Tuskegee, issued in 1915 a call for a National Health Improvement Week which was seconded by the National Negro Business League. In 1937 Negroes and whites over a national area co-operated to improve living conditions and cut the high American death rates. Important organizations joined in this work, including the National Medical Association (Negro), National Negro Insurance Association, U. S. Public Health Service, Julius Rosenwald Fund. The Health-Week Program follows: (1) Mobilization

Day, with health sermons and talks, and mass meeting; (2) Home Clean-Up, with parents' meetings and health examinations; (3) Community Sanitation, with talks on water, food, and milk supplies, waste disposal, clean streets, safe wells and sanitary privies; (4) Special Campaigns; (5) Adult Health; (6) School Health; (7) General Clean-Up; and (8) Follow-Up, with progress reports.

Negro Death Rates.—The need of a continuing program of health education for Negroes is shown in the following figures of the death rate per 1,000 persons (see Gover, "Mortality among Southern Negroes," *Public Health Bulletin,* No. 235, June, 1937, p. 19):

	Colored	White
South Carolina	29.48	15.19
Louisiana	24.21	12.84
Georgia	23.70	12.57
Mississippi	22.88	13.72
District of Columbia	22.75	10.98
Arkansas	21.61	14.03
Tennessee	20.98	12.33
Florida	20.85	10.15
Virgina	20.82	11.11
North Carolina	20.82	12.57
Kentucky	20.73	11.18
Missouri	20.02	10.53

The following table gives the death rate per 1,000 persons according to diseases (See Gover, "Mortality among Southern Negroes," *Public Health Bulletin,* p. 21):

	Colored	White
All Heart	206.1	135.6
All Kidney	141.6	76.8
Respiratory Tuberculosis	131.9	44.8
Cerebral Hemorrhage	118.7	67.3
Pneumonia	109.5	63.2
Accident	73.6	64.0
Early Infancy	66.7	57.5

Regional Conferences.—The National Association of Colored Graduate Nurses (Mrs. Estelle M. Riddle, R.N., president) conducted several regional conferences to stimulate public consciousness of the importance of health education in rural districts as well as urban centers.

THE NEGRO AND THE C.C.C.

Current Work.—At the opening of 1937 over 9% of the 300,000 enrollees in the Civilian Conservation Corps were colored. During four years the C.C.C. aided 15,000 Negroes. During the "Open House" celebrations, held in April, over 100,000 visitors saw what the C.C.C. is doing for and with Negro youth. The Negro educational advisers during the year helped in the organization and direction of Red Cross first-aid and life-saving classes, sponsored Negro-history-week and health programs, organized radio broadcasts over local and national hook-ups, planned recreational programs, conducted classes in academic studies, as well as in arts and crafts, prepared teaching outlines, and set up exhibits of work done by enrollees. On the C.C.C. work for Negroes the U.S. Government spent close to a million dollars a month. At Hampton Institute the Negro C.C.C. educational advisers of the Third Corps Area, under the direction of Dr. Thomas Gordon Bennett of Baltimore, held a two-week summer conference.

Trained Leadership.—Dr. Howard Oxley, of Washington, D.C., director of C.C.C. camp education (*School Life,* January, 1937) pointed out that 89.2% of the 29,085 enrollees, in 186 camps, were taking part in educational work—1.2% greater than that averaged by all enrollees. These Negroes were assisted by 186 advisers, of whom 162 were Negroes, all of them college graduates, with 27% holding the master's degree and 2% holding the doctor's degree. Some 54% of the Negro advisers had had previous teaching experience and 28% had worked in industry or business.

The major function of the education in Negro camps was to remove illiteracy. Approximately 81% of the 2,239 Negro illiterates were voluntarily taking work to help remove their handicap. About 53% of the C.C.C. Negro members were found to be on the elementary-school level and suffered from obvious handicaps—inability to figure, to speak properly, to read with ease, or to write a letter well enough to secure a job. Of the 15,312 Negro enrollees on the elementary level, 72% were taking some elementary work.

Relation to Life.—The C.C.C. camps were giving Negroes training for the types of jobs they would most

likely enter—automobile mechanics, chauffeuring, cooking, table work, mess management, personal service, laundering, pressing, shoe repairing, barbering, clerical work, painting, and farming. Enrollees had the opportunity of trying their skill under competent supervision on such jobs as masonry, carpentering, forestry, nursery work, terracing, surveying, road construction, truck driving, and tractor operation.

THE NEGRO AND NATIONAL YOUTH ADMINISTRATION

Federal Conference.—The year opened auspiciously for the education of American Negroes with a National Conference on Problems of the Negro and Negro Youth (*Monthly Labor Review*, February, 1937), held in Washington, D.C. The major subjects were: "Increased Opportunity for employment and economic security: adequate educational and recreational opportunity; improved health and housing conditions; and security of life and equal protection under the law." The Conference was sponsored by the Division of Negro Affairs of the National Youth Administration (Mrs. Mary McLeod Bethune, director). Addresses were made by Aubrey Williams, Mrs. Franklin D. Roosevelt, Daniel C. Roper (Secretary of Commerce), Robert Fechner, John W. Studebaker, Miss Josephine Roche, and Henry A. Wallace (Secretary of Agriculture). Programs were presented by Negro representatives of a number of major U. S. Government departments and administrations, including Agriculture, Commerce, Interior, and Labor, Works Progress Administration, and the Civilian Conservation Corps.

The Conference was restricted to formulating objectives that could be accomplished by action of the executive and legislative branches of the Federal Government. The Conference recognized only one standard of public rights, duties, and privileges for all American citizens. It requested the Federal Government to "take the lead and set the example by abolishing racial segregation . . . and refrain from lending its aid and support to the extension of segregation." The Conference recommended (1) that a well-qualified Negro should be appointed a member of the Federal Committee on Apprentice Training; (2) that a similar appointment should be made to each state committee on apprentice training; and (3) that state advisory committees on apprentice training should include a fair proportion of representative Negroes.

Summary of Work.—Mrs. Bethune gave the following summary before the Kentucky Negro Educational Association (Louisville, April 15): "In 48 States and the District of Columbia, more than 27,000 Negro boys and girls are being assisted to attend high school; 6,600 more are being aided to go to college; through our special Negro graduate aid fund of $75,000, more than 300 Negro graduate students are being helped to pursue advanced study and research at 19 colleges and universities. Aid, amounting to some $2,000,000, makes it possible for approximately 35,000 Negro students to attend school who otherwise would not have had the opportunity.

"At Tuskegee Institute the N.Y.A. helped to finance a group in special training for hotel work. At the Alabama State College (Montgomery) the N.Y.A. aided a group in training work in the nursery, kindergarten, and first grade.

"Some 20,000 Negro youth, out of school and unemployed," according to Mrs. Bethune, "are at work upon socially significant projects under the N.Y.A., including recreational leadership, library services, flood relief and sanitation, assistance to home-demonstration agents, construction and repair furniture, agricultural projects in soil conservation, seed-testing, and gardening, etc."

ROSENWALD AWARDS

One of the serious problems of education, as it affects American Negroes, is that of giving recognition to outstanding men and women who should be encouraged to do scholarly and creative work. The Julius Rosenwald Fund in 1937 made awards to 30 Negroes. The average fellowship

grant amounted to $1,500 and made possible a year of advanced study and experience to persons of unusual achievement and promise. Some of the contemplated work covered the following fields: music, chemical research, internal medicine and diagnosis, English and French literature, sociology and statistics, mathematics, creative writing, migration, social anthropology, folk drama, history, agriculture and farm organization, spectroscopy, economics, psychology, art education. Negro colleges, public and private, expressed great need of young men and women with sound general and technical preparation. The Rosenwald Awards reached a wide geographic area and a variety of Negro talent that deserved financial support and intellectual recognition.

RACE RELATIONS

Government Agencies.—Advancement of the education of American Negroes is conditioned upon the steady improvement in race relations, especially in regions that have large Negro populations. During 1937 the operation of many Government housing and community-betterment projects, especially in the southern States, made it possible for outstanding white and Negro leaders to meet and discuss frankly the needs and problems of the Negro masses and thereby forestall racial conflict that arises out of misunderstanding and needless irritation.

Virginia Commission on Interracial Co-operation (L. R. Reynolds, Richmond, secretary) continued in a quiet, dignified manner to prevent interracial misunderstanding, injustice, and prejudice by holding large and small conferences of white and Negro leaders, by furnishing accurate news-stories to the press, by organizing student and adult study groups, and by making contacts with men and women in key positions affecting Negro interests.

Lynching decreased, due, according to President Patterson of Tuskegee Institute, (1) to the disappearance of frontier characteristics in the South; (2) to the breaking down of isolation in the South by increased facilities, such as rural free delivery, more telegraph offices, more telephones, the advent of radio, and more paved roads; and (3) the increased agitation against the regional evil of lynching.

Teacher Co-operation. — The Teachers Association, formed in Philadelphia out of the National Association of Teachers in Colored Schools, co-operated with 26 national organizations in bringing about changes in the Harrison-Black-Fletcher bill to abolish discrimination in the use of Federal funds in the southern States. It co-operated also with the National Association for the Advancement of Colored People to equalize teachers' salaries in Maryland. In 1938–1939 Maryland will pay all teachers, Negro and white, the same salary based on training, experience, and certification.

Jeanes Plan.—Race relations were improved by many agencies and groups of workers, including the various committees formed to promote interracial co-operation and goodwill; local, state, and Federal workers engaged in educational and community improvement projects; white and Negro editors and news-writers; officers of parent-teacher associations; health and social workers; and those who are responsible for enforcing the law of the land. Through a co-operative plan, Virginia employed in 68 counties 64 Jeanes supervising teachers to assist in the regular school work and improve school and community relationships. These Jeanes teachers, who work in close connection with the Southern Education Foundation (Dr. Arthur D. Wright, president), helped in raising funds for school buildings, in securing clothing for needy children, in setting up health clinics, and in improving classroom instruction.

One of the outstanding results of the campaign for better race relations in the South has been the realization on the part of thousands of fine white citizens, who are in key positions, that equal educational opportunities should be provided for *all* children and that plans for the accomplishment of this aim should be carried forward persistently and courageously.

The Negro Organization Society of Virginia celebrated its twenty-fifth anniversary at Charlotte Court House. Its work is organized in 61 of the 100 counties. In a single year the Society raised over $32,000 to promote "better homes, better schools, better health, better farms, and better business" and held, through its affiliated associations, some 20,000 meetings which aimed to improve community life.

Social Welfare.—During the summer an Institute of Social Welfare was held at Hampton Institute, sponsored by the Negro Organization Society of Virginia, to provide teachers, school patrons, and community leaders with a sound race-relations point of view and to give them helpful information concerning local, state, and Federal agencies whose services could be brought to bear upon urgent community problems. The secretary of the group was J. A. Oliver of Richmond. The theme of the Institute was stated in a question: How may Negroes of Virginia get a greater share of the public services that are generally missed? Some of the topics included educational aids, political and vocational opportunities, and services furnished by important agencies of government.

Seminar Conference.—Race relations, from an international angle, formed the basis of a seminar-conference, organized by Dr. Charles T. Loram, Sterling professor in the Graduate School at Yale University, and Professor Howard W. Odum of Chapel Hill, N.C., which was held at the University of North Carolina, Hampton Institute, and Yale during October. This seminar-conference was held under the auspices of the Carnegie Corporation and the General Education Board.

About 20 of the senior education officials from Africa, selected by the British Colonial Office and about 30 state agents for Negro education in the South, together with invited guests who were intimately associated with the education of Negroes in America and Africa, discussed frankly and constructively problems of agricultural, industrial, and teacher education and such questions as Negro college and university administration, Negro farm population, Negro in the press, work of county and extension agents, lynching, Negro in industry, religion in Negro colleges. Among those serving on the executive committee, besides Professors Loram and Odum, were Frank P. Graham, president of the University of North Carolina; Arthur Howe, president of Hampton Institute; and Jackson Davis of the General Education Board.

Northern Urban Areas. — The problem of race relations in northern urban areas was handled by the National Urban League and the State Commission to Study the Economic and Social Conditions of New York's Negro Population (Lester B. Granger, executive director).

Southern Education Foundation.—One of the hopeful signs in American race relations has been the willingness of outstanding white and Negro leaders to work together. During the summer Dr. Arthur D. Wright announced the consolidation of two of the oldest foundations for the advancement of Negro education —the John F. Slater Fund, created in 1882, and the Anna T. Jeanes Fund, established 30 years ago. The new organization is known as the Southern Education Foundation (Arthur D. Wright, president) and is incorporated under the State of New York laws. The board has an interracial membership.

Teachers College Project.—Teachers College, Columbia University, offered a special course, "The Education of Negroes in the United States," by Professor Mabel Carney, extending through the academic year as well as during the summer session. This institution condoned no suggestion of segregation or implied any special brand of education "for Negroes." The international and interracial character of the student body at Teachers College and its close proximity to the great Negro laboratory of Harlem enriched the sources of information for this class which dealt with the contributions and services of philanthropic foundations;

analysis of the Negro population; distinctive problems of Negro life; occupational opportunity and economic status; the Negro in industry and in agriculture; Negro housing; Negro home and church; inquiries on the dual system; status and training of Negro teachers; and forward-looking developments in the education of Negroes.

LIBRARIES

By Mildred Othmer Peterson

American Library Association

NATIONAL LIBRARY PLAN

With returning prosperity the work and activities of state and national library planning committees are showing results. During the year the majority of these committees recommended state aid in large amounts for the support of public libraries, and the Library Extension Board of the American Library Association put major effort into advisory and information service in this field.

Vigorous campaigns in a dozen States were successful in four. Ohio appropriated $150,000 for 1937–39, its second biennial appropriation in aid of public libraries. Arkansas made a biennial appropriation of $64,600 to aid in the establishment of county and regional libraries. Michigan made provision for annual grants of $500,000 beginning with the year 1938–39, partly for existing libraries and partly to stimulate the establishment of library service in areas now without it. In Vermont, a biennial grant of $25,000 was made for regional library service through the co-ordination of existing small libraries.

New Jersey and Pennsylvania continued their aid for county libraries. Progress in state aid for school libraries was marked by appropriations of $100,000 in Tennessee and Georgia and of more than $250,000 in Louisiana. Two experiments in regional library service are being carried on in Louisiana with funds from the state board of education and the Louisiana Library Commission. State library agencies were strengthened by legislative action in several States. Appropriations were made for the first time in several years in Arkansas; were doubled in Idaho and Washington, and increased in more than a dozen other States.

FEDERAL RELATIONS WITH LIBRARIES

An appropriation of $25,000 by Congress for the Library Service Division in the U. S. Office of Education (see "Libraries," The American Year Book, 1936) was renewed but it was not until the summer of 1937 that the Civil Service Commission announced the examinations to fill the positions. Permanent appointments were made at the end of the year. In June a request was received from the President's Advisory Committee on Education for a statement from the A.L.A. on the subject of Federal relations with libraries. This was prepared by a special committee.

Grants were made by the Public Works Administration for remodeling many library buildings, for the erection of nine new buildings and many school buildings which will include library rooms. Among large grants were $450,000 to Oregon toward a state library and office building and $180,000 to Forth Worth, Tex. for a $400,000 public library building. National and state agencies concerned with work relief projects continued to provide workers for many library projects for which the regular appropriations made no provision. These range from book repair to bibliographic undertakings and rural library extension. Two competent librarians have been employed for short periods by the W.P.A. in Washington as consultants on library projects.

SERVICE OF ESTABLISHED LIBRARIES

The latest complete figures available for public libraries in the United States were given in THE AMERICAN YEAR BOOK, 1935 in the article on "Libraries." The reports received by the A.L.A. from libraries serving more than 200,000 population in 1936 showed a decided general rise in appropriations and expenditures. The circulation continued to drop below that of the peak years of 1931 and 1932 but was still well above the figure for 1928 and 1929. The continued use of public libraries and the realization of their need for more public funds were apparent. The most recent library statistics available were published in the *Bulletin of the A.L.A.* for February and April, 1937.

ADULT EDUCATION

Three general objectives were followed in the work of the A.L.A. Adult Education Board: to chart needed developments by studying existing practices in the light of new needs; to suggest, stimulate, and promote the extension and improvement of the adult education services of libraries; and to give information and advice to enquiring librarians and educators.

A report on *The Library in the TVA Adult Education Program,* prepared by John Chancellor, with an appendix on reading interests of TVA employees, by R. Russell Munn, was published by the A.L.A. and *Printed Page and Public Platform: A Study of the Relations of Reading to Forums and Discussion,* also by John Chancellor, is in process of publication by the U. S. Office of Education.

The Adult Education Board joined with the Public Forum Project of the U. S. Office of Education and Public Affairs Committee in establishing special displays of about 1,000 pamphlets on public questions in libraries of 30 localities where large forums on other adult education projects were located.

A number of "case study" articles, descriptive of significant types of work in certain libraries were published during the year in the *Wilson Bulletin* and the *Bulletin of the A.L.A.*

A survey of the *Reading with a Purpose,* a series of reading courses published by the A.L.A., was made with the result that several of the out-dated courses will be eliminated. A new series of briefer courses is undertaken. A recent census of readers' advisory and informal adult education service in public libraries shows slow but definite expansion during the year.

RESEARCH

A subcommittee for the South of the A.L.A. Board on Resources of American Libraries made an exhaustive survey of the resources of all important libraries in 13 southern States. Work on union catalogs was continued or was begun in several regions and publication of results on microphotography research was also continued (see THE AMERICAN YEAR BOOK, 1936, p. 822). A study of libraries of Washington, D.C. made under the auspices of the American Council on Education was planographed by the A.L.A. "An Experiment in Advisory Service and Graded Reading in the C.C.C. Camps," conducted by the Readers' Bureau of the Cincinnati Public Library in cooperation with Paul B. Williams, district educational adviser of the Fort Thomas District, Fifth Corps Area, Civilian Conservation Corps, was published in the *Library Quarterly,* VII.

In an article, "School Library Studies and Research," Eleanor M. Witmer (*Library Quarterly,* VII) covers ten fields of investigation that need research. She also lists 100 studies made since 1930 which pertain to school libraries. Her report was made for the Joint Committee of the National Education Association and the A.L.A.

The results of studies in cost accounting for libraries were given in "Library Cost Accounting" by Fremont Rider (*Library Journal,* VI), a survey based on three years experience at Wesleyan University, Middleton, Conn., a library of over 200,000 volumes, and *Cost Accounting for*

Libraries: Acquisition and Cataloging, by Robert A. Miller (*Library Journal,* VII), an investigation carried on in a large university library.

LIBRARY TRAINING

Preparation for various special fields of library service and for special libraries and subject departments of libraries was the subject of considerable thought, discussion and experimentation during 1937 by library schools and groups concerned with professional training. The vocational pamphlet, *Special Librarianship as a Career,* was revised by the Special Libraries Association.

The A.L.A. Board of Education for Librarianship held four joint meetings with representatives of the American Association of Law Libraries, Special Libraries Association, Music Library Association and the A.L.A. Hospital Libraries Committee to consider the means by which library schools can best meet the demand for trained law, music, hospital or other special librarians. The results were published in the *Bulletin of the A.L.A.,* for August, which contained also an article on "Training for Music Librarianship, Aims and Opportunities," by Otto Kinkeldey.

Several new courses of training in special fields were introduced by library schools during the year and a seminar for college librarians and an institute on adult education for librarians in service were conducted by the Graduate Library School, University of Chicago. An innovation in library schools was the comprehensive final examination required of all candidates for the Bachelor of Science degree or for the certificate, Columbia University School of Library Service.

A survey of education for librarianship in California was made by the Board of Education for Librarianship and will be followed by a regional survey of a half-dozen selected States. *The Preparation of Teacher-librarians,* a report of the survey of teacher-librarian training agencies made in 1935 and 1936 was published. Younger librarians in the profession expressed interest in preparation for library service by the appointment of a committee to survey possibilities for stimulating junior librarians in professional development. The A.L.A. Board on Library Service to Children and Young People submitted to the Board of Education for Librarianship a resolution that recommended further study of the elements of training needed and job analyses of the work with children and with young people in schools and public libraries. The two boards met at the 1937 midwinter conference to formulate a definite program.

"The Teaching of Cataloging and Classification," by Margaret Mann in the *Bulletin of the A.L.A.* May, 1937, began the series of articles on newer methods of teaching library science. Other important articles written on education for librarianship were "The American Library School Today," by Louis R. Wilson and "Why Graduate Study in Librarianship," by Leon Carnovsky in the *Library Quarterly* for April, 1937, an issue devoted to education for librarianship in Europe and America in connection with the celebration of the 50th anniversary of the opening of the first School of Library Economy at Columbia College, Jan. 5, 1887, and "Tomorrow's Library Schools," by Douglas Waples, *Library Journal,* Jan., 1937.

The A.L.A. Committee on Fellowships and Scholarships awarded grants from the Carnegie Corporation of New York to five American and two Canadian librarians for special projects or study. The Corporation also extended grants-in-aid to ten librarians from South Africa, Germany, Switzerland, Australia, Puerto Rico, and Newfoundland for the study of library service in the United States.

LIBRARY PERSONNEL

The A.L.A. Committee on Salaries, Staff and Service authorized a cost of living survey, which was made in February, 1937, and advocated the organization of personnel committees by state library associations to handle salary and tenure problems as well as other personnel questions

of interest to their respective States. Library salaries have not increased in proportion to the cost of living and, although complete or partial restoration of salaries and the return of annual increments are noticed in the present business cycle, library boards have been slow in following this trend. There has been a slight improvement in regard to library salaries, but not comparable to salaries of business employees, school teachers, or public employees. Beginning salaries for library school graduates are considerably higher than a year or two ago, due to the fact that budgets have been partially restored. The number of unemployed has decreased and persons graduating from library schools have been placed more easily than in several years past. At the conference in New York City in 1937, the A.L.A. Council, in recognition of the increasing emphasis on recent developments in library personnel, created the Board on Salaries, Staff and Tenure, which supersedes the Committee on Salaries, Staff and Service.

GIFTS, GRANTS AND BUILDINGS

During the year many gifts of both money and books were made to American libraries. In Massachusetts, gifts to libraries in 1936 mounted to $336,683, the largest of which was a bequest of $200,000 to the Thomas Crane Library of Quincy by Mrs. Albert E. Crane. Among college libraries receiving gifts for new buildings were: Franklin and Marshall College, Lancaster, Pa., $250,000 from Dr. B. F. Fackenthal, Jr.; George Washington University, Washington, D.C., $250,000 from Abram Lisner; Colby College, $150,000 for the addition to the library to be named for Elijah Parish Lovejoy, an alumnus who was killed 100 years ago as a martyr to the freedom of the press; and Drake University, Des Moines, $100,000 from Gardner Cowles. A gift of $500,000 was made to Carleton College, Northfield, Minn., to be known as the Frank B. Kellogg Foundation for Education in International Relations, part of which is to be used in the purchase of books in this field for the library.

Among the most valuable gifts of books during the year was a collection of educational books, said to be the largest of its kind in the world, to Columbia University Library by George A. Plimpton.

Among the grants made by the Carnegie Corporation of New York were $300,000 for aid to junior college libraries; $150,000 to the Department of Library Science, University of Michigan; $150,000 to the University of California School of Librarianship; $7,500 to the School of Librarianship of the University of Denver; $5,000 to the A.L.A. Committee on Library Terminology and $16,000 for a study of the co-ordination of the administration of the library with the education program of the college, which is being made by the Association of American Colleges. A survey of libraries of Central America and the West Indies is being made for Tulane University under a Rockefeller Foundation grant. The Rockefeller Foundation also made a grant for the A.L.A.'s microphotography demonstration given at the Paris Exposition and for further study in this field at the University of Chicago.

The most significant event of the year in the field of library building was the appropriation of $2,000,000 for the completion of the central building of the Brooklyn Public Library, which was begun 25 years ago.

Among the buildings completed or dedicated which are not mentioned elsewhere in this article were Brooklyn College Library, Van Ingen Hall of the Vassar College Library, an addition to Smith College Library, Rhode Island State College Library, Linfield College Library, Mercer College Library, the Glendale Branch of the Queens Borough Public Library, Rochester Minnesota Public Library, Bennington, Vermont Public Library, Agnes Scott College Library and the Library of the College of New Rochelle, New Rochelle, N.Y.

FRIENDS OF THE LIBRARY GROUPS

Seventy-seven Friends of the Library groups have been formed or

are now in the process of formation. These groups, which are composed of persons interested in advancing library objectives similar to the way that parent-teacher groups seek to understand and aid the schools, are formed around various types of libraries. (See "Libraries," THE AMERICAN YEAR BOOK, 1936). Two new groups were formed during the year outside of the United States. These were in connection with the St. John Public Library, St. John, New Brunswick, Canada, and the Library of Congress of Mexico, Mexico City.

AMERICAN LIBRARY ASSOCIATION

Officers for 1937–38 elected at the 59th annual conference of the A.L.A. are: Harrison Warwick Craver, New York City, President; Milton James Ferguson, Brooklyn, first vice-president and president elect; Herbert S. Hirshberg, Cleveland, O., second vice-president; and Matthew S. Dudgeon, Milwaukee, Wis., treasurer. The conference was held in New York City, June 21–26 with 5,500 of the Association's 14,000 members present. The Midwinter Conference was held Dec. 27–30, 1937 in Chicago, and the 1938 conference will be held in Kansas City, Mo., June 13–18. Headquarters of the Association, which has a staff of 67 persons, are at 520 N. Michigan Ave., Chicago, with Carl H. Milam as executive secretary.

At the 1936 midwinter meeting, held in Chicago Dec. 28–30, the Council, policy forming body of the association, endorsed the general programs of government work relief, especially those sponsored and supervised by competent library agencies; advocated the continuance and publication of the *Federal Index of American Design;* endorsed the Historical Records Survey, conducted by the WPA; and authorized a series of ten Latin-American library fellowships covering a five-year period if and when funds are available.

At the New York City Conference the John Newbery Medal, awarded annually by the Section for Library Work with Children for the most distinguished children's book written by an American during the year, was presented to Ruth Sawyer for her book, *Roller Skates.* Announcements were also made that a new medal to be called "Randolph Caldecott Medal" will be presented annually to the artist of the most distinguished picture book for children published in the United States during the year. Frederic G. Melcher, editor of *Publishers' Weekly,* is the donor of both of the awards for children's books.

Two former presidents of the A.L.A. died during the year: Herman H. B. Meyer, January 16, who was for 30 years connected with the Library of Congress; and George Herbert Locke, January 28, who was librarian of the Toronto Public Library since 1908.

The A.L.A. was represented at the following international Conferences during the year: Congrés International de l'Enseignment Primare et de l'Education Populaire, Paris, July 23–31; World Federation of Education Association, Tokyo, Japan, Aug. 2–7; and World Congress of Universal Documentation, Paris, Aug. 16–31.

The total income of the A.L.A. for the last fiscal year was more than $312,000 but less than $100,000 of it was available for any and all purposes. The largest items of expenditure were for the publication of association and professional publications, for carrying out definite projects for which grants had been specifically given, and for the promotion of professional library education and activities. The association's endowment is now approximately $2,194,000.

Three periodicals are published by the association: *Bulletin of the American Library Association,* a monthly; the *Booklist,* published semi-monthly; and the *Subscription Books Bulletin,* a quarterly.

PUBLICATIONS

Some additional 1937 A.L.A. publications were: *Books That Have Shaped the World,* friendly essays on reading which introduced annotated lists in biography, literature and drama; *The Library Trustee,*

a guide to relationships between library boards, governing bodies, the public, librarian and staff; *Microphotography for Libraries 1937*, recounting recent developments in this new field and supplementing *Microphotography for Libraries*, the first book on the subject in any language, published in 1936; *The Public Library*, interpreting the library's place in American society; *Basic Reference Books*, an introduction to the evaluation and use of encyclopedias, dictionaries, atlases, etc.; *Vocational Guidance through the Library*, which lists organizations interested in guidance as well as books, pamphlets, etc.; and *Book Automobiles*, a discussion of general principles, and data on various types of mobile library units with photographs and working drawings.

Some other recent publications include: Siri Andrews, *Children's Catalog* (Wilson, 5th ed., 1936); Margaret Burton, *Famous Libraries of the World* (Vol. II of *The World's Great Libraries*, surveyed by Arundell Esdaile, London, Grafton, 1937); Dorothy E. Cook, Agnes Cowing and Isabel Monro, *Standard Catalog for High School Libraries* (Wilson, 3d ed., 1937); Harvard University Graduate School of Business Administration Library, *A Classification of Business Literature* (Wilson, 1937); J. G. Hodgson, *Official Publications of American Counties, a Union List* (Ft. Collins, Colorado, 1937); B. E. Mahony and Elinor Whitney, *Five Years of Children's Books* (Doubleday, 1936); L. F. Schmeckebier, *Government Publications and Their Use* (Brookings Institution, 1936); Marian Shaw, ed., *Library Literature, Annual Volume, 1936* (Wilson, 1937); C. W. Sumner, *The Birthright of Babyhood* (Nelson, 1936); L. R. Wilson, ed., *Library Trends: Papers Presented before the Library Institute at the University of Chicago, Aug. 3–15, 1938* (Univ. of Chicago Press, 1937).

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

American Assn. for Adult Education, 60 E. 42nd St., New York City.

American Council on Education, 744 Jackson Place, Washington, D.C.

American Council of Learned Societies, 907 15th St., Washington, D.C.

American Federation of Teachers, 219 Fifteenth St., Toledo, O.

General Education Board, 49 W. 49th Street, New York City.

Bureau of Educational Reference and Research, University of Michigan, Ann Arbor, Mich.

National Congress of Parents and Teachers, 1201 16th St., N.W., Washington, D.C.

National Council of Education, Teachers College, Columbia University, New York City.

National Education Assn. of the U.S.A., 1201 16th St., N.W. Washington, D.C.

National Research Council, Division of Educational Relations, 2101 Constitution Ave., Washington, D.C.

National Society for the Study of Education, University of Minnesota, Minneapolis, Minn.

Public Education Assn., 745 Fifth Ave., New York City.

INTERNATIONAL

Institute of International Education, 2 W. 45th St., New York City.

International Council for the Education of Exceptional Children, 3 East 25th St., Baltimore, Md.

International Council of Religious Education, 100 E. 42nd St., New York City.

PAN-AMERICAN EDUCATIONAL CONGRESS, Universidad de Chile, Cosilla 2543, Santiago, Chile.

TEACHERS

AMERICAN FEDERATION OF TEACHERS, 219 Fifteenth St., Toledo, O.

CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING, 522 Fifth Avenue, New York City.

EDUCATORS ASSN., 307 Fifth Ave., New York City.

NATIONAL STUDENT FEDERATION OF AMERICA, 8 West 40th St., New York City.

STUDENTS CO-OPERATIVE SOCIETY, 14 Contes Slip, New York City.

TEACHERS UNION, 114 East 16th St., New York City.

SCHOOLS

AMERICAN SCHOOL CITIZENSHIP LEAGUE, 295 Commonwealth Ave., Boston, Mass.

CHILD STUDY ASSN. OF AMERICA, INC., 221 W. 57th St., New York City.

NATIONAL ASSN. OF HIGH SCHOOL SUPERVISORS AND INSPECTORS, State Department of Education, Columbus, O.

NATIONAL ASSN. OF SECONDARY SCHOOL PRINCIPALS, 5835 Kimbark Ave., Chicago, Ill.

NATIONAL KINDERGARTEN ASSN., 8 West 40th St., New York City.

Y.M.C.A. EDUCATIONAL SECRETARIES ASSN., 55 Hanson Place, Brooklyn, New York City.

COLLEGES AND UNIVERSITIES

AMERICAN ASSN. OF COLLEGIATE REGISTRARS, George Peabody College for Teachers, Nashville, Tenn.

AMERICAN ASSN. OF JUNIOR COLLEGES, Little Rock Junior College, Little Rock, Ark.

AMERICAN ASSN. OF UNIVERSITY PROFESSORS, 744 Jackson Place, Washington, D.C.

AMERICAN ASSN. OF UNIVERSITY WOMEN, 1634 I St., N.W., Washington, D.C.

ASSOCIATION OF AMERICAN COLLEGES, 19 West 44th St., New York City.

ASSOCIATION OF AMERICAN UNIVERSITIES, Yale University, New Haven, Conn.

ASSOCIATION OF COLLEGES FOR NEGRO YOUTH, Fisk University, Nashville, Tenn.

ASSOCIATION OF LAND GRANT COLLEGES AND UNIVERSITIES, University of Kentucky, Lexington, Ky.

COLLEGE ENTRANCE EXAMINATION BOARD, 431 W. 117th St., New York City.

NATIONAL ASSN. OF STATE UNIVERSITIES, Miami University, Oxford, O.

NATIONAL UNIVERSITY EXTENSION ASSN., Bloomington, Ind.

NEW ENGLAND ASSN. OF COLLEGES AND SECONDARY SCHOOLS, Tufts College, Medford, Mass.

PHI BETA KAPPA, 145 W. 55th St., New York City.

PROFESSIONAL EDUCATION

AMERICAN ASSOCIATION OF COLLEGIATE SCHOOLS OF BUSINESS, Charles C. Fichtner, Secretary-Treasurer, University of Arkansas, Fayetteville, Ark.

AMERICAN ASSN. OF TEACHERS COLLEGES, State Normal School, Oneonta, New York.

AMERICAN MEDICAL ASSN., Council on Medical Education and Hospitals, 535 N. Dearborn St., Chicago, Ill.

ASSOCIATION OF AMERICAN LAW SCHOOLS, Tulane University, New Orleans, La.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES, 5 S. Wabash Ave., Chicago, Ill.

SECTION OF LEGAL EDUCATION, AMERICAN BAR ASSN., 1140 N. Dearborn St., Chicago, Ill.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION, University of Pittsburgh, Pittsburgh, Pa.

SPECIAL EDUCATION

AMERICAN ASSN. TO PROMOTE TEACHING OF SPEECH TO THE DEAF, School for the Deaf, Staunton, Va.

AMERICAN CHILD HEALTH ASSN., 50 West 50th St., New York City.

AMERICAN HUMANE EDUCATION SOCIETY, 180 Longwood Ave., Boston, Mass.

AMERICAN PHYSICAL EDUCATION ASSN., 311 Maynard St., Ann Arbor, Mich.

NATIONAL ASSN. OF THE DEAF, 3633 East Tremont Ave., New York City.

VOCATIONAL

American Assn. for the Advancement of Agricultural Teaching, Iowa State College, Ames, Ia.

American Home Economics Assn., Mills Building, Washington, D.C.

American Vocational Association, 1010 Vermont Ave., Washington, D.C.

National Vocational Guidance Assn., 25 Lawrence Hall, Harvard University, Cambridge, Mass.

Workers Education Bureau of America, Machinists Building, Washington, D.C.

Note: for additional educational societies consult U. S. Office of Education, Washington, D.C.

NECROLOGY

(From *The New York Times*, January 1, 1938)

Abbott, Gordon, Boston financier, 74, Jan. 24.
Abdullah, Hamid Bey, "The Turkish Shakespeare," 86, April 12.
Adler, Dr. Alfred, pyschologist, 67, May 28.
Ahmed, Prince Seif El Din, eccentric royal Egyptian, 60, Nov. 19.
Aldrich, Richard, music critic emeritus *The New York Times*, 73, died in Rome, June 2.
Alexander, William, secretary Equitable Life A. S., 88, March 25.
Allaire, John, dean of maîtres-d'armes, 80, Feb. 7.
Allen, Cecil J., society editor of *The Sun*, 69, Dec. 16.
Alzugaray, Dr. Jose Bareres de, steel chemist, 71, June 12.
Ambient, Mark, dramatist, 77, Aug. 11.
Ames, Winthrop, theatrical producer, 66, Nov. 3.
Anderson, Larz, former Ambassador to Japan, 70, April 13.
Ardolino Sr., Ralph J., sculptor, 61, Jan. 15.
Baker, George F., banker, 59, May 30.
Baker, Newton Diehl, Secretary of War under Wilson (1916–21), 66, Dec. 25.
Barbour, Dr. Clarence A., president Brown University, 69, Jan. 16.
Barrie, Sir James M., creator of "Peter Pan," 77, June 19.
Basy, Alexander, impresario, 54, Jan. 13.
Beddoe, Dan, oratorio tenor, 74, Dec. 26.
Bekker, Paul, music critic, author, 54, March 7.
Bidwell, Daniel D., correspondent, 70, April 24.
Billings, Cornelius K. G., sportsman, 75, May 6.
Bingham, Robert Worth, Ambassador to Great Britain, 66, Dec. 18.
Bisleti, Gaetano, Cardinal, 81, Aug. 30.
Boleslawski, Richard, film director, 47, Jan. 17.
Booth, Sydney, actor, 64, Feb. 5.
Brand, Mrs. Robert H. (Phyllis Langhorne, original "Gibson Girl"), Jan. 20.
Breckenridge, Hugh R., artist, 67, Nov. 4.
Browne, Lewis A., novelist, dramatist, 61, May 24.
Browne, W. Graham, actor-producer, 67, March 11.
Burke, John, United States Treasurer under Wilson, 71, May 14.
Burleson, Albert Sidney, ex-Postmaster General, 74, Nov. 24.
Butler, Ellis Parker, humorist, 67, Sept. 13.
Carter, Mrs. Leslie, actress, 75, Nov. 13.
Chabas, Paul, painted "September Morn," 68, May 10.
Chamberlain, Sir Austen, father of the Locarno Treaty, 74, March 16.
Channing, Grace Ellery (Mrs. Channing-Stetson), poet, essayist, 74, April 3.
Chase, Admiral Jehu V., U.S.N., 68, May 24.
Chase, Dr. Lewis N., scholar, 64, Sept. 23.
Child, Edwin Burrage, portrait painter, 68, March 10.
Christman, William Weaver, nature poet, 7, Feb. 26.
Clarkson, Grosvenor, director National Defense Council, 54, Jan. 23.
Clem, Major Gen. John Lincoln, U.S.A. (retired), "Drummer Boy of Chickamauga," 86, May 13.
Clive, Colin, actor, 37, June 25.
Coburn, Mrs. Charles D. (Ivah Wills), Coburn Players, 60, April 27.
Collins, Robert Moore, A.P. foreign correspondent, 69, March 30.
Conquest, Ida, actress, 61, July 11.
Cooper, Colin Campbell, artist, 81, Nov. 6.
Cooper, Colonel Hugh L., engineer who designed Muscle Shoals, 72, June 24.
Costa, Alfonso da, war Premier of Portugal, 72, May 11.

COULTER, FRAZER, actor, 88, Jan. 26.
COUSENS, Dr. JOHN ALBERT, president Tufts College, 62, July 2.
CRANE, BRUCE, landscapist, 80, Oct. 29.
CROISSET, FRANCIS de, dramatist, 60, Nov. 8.
DALY, Sergt. Major DANIEL, M.C. (retired), twice won Congressional Medal, 63, April 27.
DALZIEL, JOHN, engraver, 98, Aug. 19.
DAMROSCH, FRANK, musician, founder Musical Institute, 78, Oct. 22.
DAPPLES, Dr. LOUIS, international banker, Nestle head, 69, July 31.
DAVID, JOHN, merchant, 67, Nov. 15.
DERNBERG, Dr. BERNHARD, Germany's last Colonial Secretary, 72, Oct. 15.
DEVER, JAMES E., journalist, 73, Feb. 13.
DEWEY, CHARLES, landscapist, 87, Jan. 17.
DOOLING, JAMES J., Tammany leader, 44, July 26.
DOSSENA, ALCEO, sculptor, 55, Oct. 11.
DOUMIC, RENÉ, permanent secretary of French Academy, 77, Dec. 2.
DRINKWATER, JOHN, dramatist, 54, March 25.
DWYER, JOHN H., Brooklyn rapid transit engineer, 81, Oct. 12.
EAMES, Dr. WILBERFORCE, bibliographer New York Public Library, 82, Dec. 6.
EARHART, AMELIA (Mrs. G. P. Putnam), first aviatrix to fly Atlantic, 39, July (?).
EARL, VIRGINIA, actress, 62, Sept. 21.
EATON, CHARLES WARREN, landscapist, 81, Sept. 10.
EDDY, CLARENCE, veteran Chicago organist, 86, Jan. 10.
ELLIS, CHARLES A., impresario, 81, March 14.
EMMET, GRENVILLE TAYLOR, Minister at Vienna ten days, 60, Sept. 26.
ERNST, LUDWIG, former Grand Duke of Hesse, 69, Oct. 9.
EYRE, EDWARD, retired head of Grace Line, 86, May 20.
FELLOWS, DEXTER W., beloved circus man, 66, Nov. 26.
FELTON, EDGAR CONWAY, steel expert, 79, Sept. 18.
FERGUSON, FRANK, actor, dramatist, wit, 74, Sept. 8.
FILENE, EDWARD A. merchant, philanthropist, 77, Sept. 26.
FLAHERTY, JAMES A., former head of K. of C., 83, Jan. 2.
FLECK, HENRY T., music teacher, formerly Hunter College, 74, Sept. 6.
FLINT, Mrs. MARY HULL, music critic, lecturer, 90, March 5.
FOOTE, ARTHUR WILLIAM, composer, organist, 84, April 9.
FORBES–ROBERTSON, Sir JOHNSTON, actor, 84, Nov. 6.
FORD, ANDREW, night editor of *The Sun*, 65, Dec. 28.
FRANKLIN–BOUILLON, HENRY, French statistician, 67, Nov. 12.
FREEMAN, HOWARD, cartoonist, 59, Aug. 21.
GALLAGHER, the Most Rev. MICHAEL J., Catholic Bishop of Detroit, 70, Jan. 20.
GARNETT, EDWARD, British author, critic, translator, 69, Feb. 21.
GASTON, Brig. Gen. JOSEPH A., U.S.A. (retired), Indian fighter, 80, March 31.
GAULIN, ALPHONSE, former United States Consul General at Paris, 66, March 6.
GAY, WALTER, painter, 81, July 14.
GEDDES, Sir ERIC, industrialist, First Lord of Admiralty in World War, 61, June 22.
GERSHWIN, GEORGE, composer, 38, July 11.
GILLETTE, WILLIAM B., marine painter, 73, July 31.
GILLETTE, WILLIAM, actor, 80, April 29.
GLAENZER, RICHARD, poet, art editor, 60, April 15.
GLEAVES, Admiral ALBERT, U.S.N. (retired), convoyed troops to France, 1917–18, 79, Jan. 6.
GOLDMAN, HENRY, banker, 79, April 4.
GORDON, the Rev. CHARLES WILLIAM, the "Sky Pilot," author (Ralph Connor), 77, Oct. 31.
GRAETZ, PAUL, actor, 47, Feb. 17.
GRANT, MADISON, zoologist, 71, May 30.
GRISWOLD, FLORENCE, "Patron Saint" of Old Lynne (Conn.) artist colony, 86, Dec. 6.
HADLEY, HENRY, composer, conductor, 66, Sept. 6.
HANOLD, WILLIAM WALDRON, of Johns-Manville for 64 years, 87, May 2.
HAPGOOD, NORMAN, editor, caustic publicist, 69, April 29.

HARLOW, JEAN, film star, 26, June 7.
HARTSHORN, STEWART, industrialist, 96, Jan. 12.
HAYDEN, CHARLES, banker, donor of Planetarium, 66, Jan. 8.
HEATHERLEY, CLIFFORD, actor, 49, Sept. 16.
HENDERSON, WILLIAM JAMES, music critic, navigator, 81, June 5.
HICKEY, the Right Rev. Mgr. DAVID J., Vicar General Brooklyn diocese, founder St. Francis Xavier parish, 84, Feb. 2.
HILL, GUS, actor-producer, 78, April 20.
HOBSON, Rear Admiral RICHMOND PEARSON, hero of Santiago episode, 1898, 66, March 16.
HORNADAY, Dr. WILLIAM T., naturalist, 82, March 6.
HORVATH, Lieut. Gen. DMITRI, White Russian, 76, May 16.
HOUGHTON, ALBERT, book publisher, 87, Dec. 19.
HUBAY, JENO de SZALATNA, violinist, composer, 78, March 12.
HUDDLESTON, Mrs. MYRTLE, endurance record swimmer, 39, Jan. 29.
HUNT, Dr. LEIGH HARRISON, Professor Emeritus of Art College of City of New York, 79, Dec. 16.
ILUNDAIN y ESTEBAN, Cardinal EUSTACE, Archbishop of Seville, 74, Aug. 10.
INCE, RALPH W., actor-director, 50, April 11.
IRWIN, EDWARD, actor, 70, Feb. 25.
ISELIN, WILLIAM, E., merchant, 89, Jan. 26.
JAMESON, Dr. JOHN F., historian, 78, Sept. 28.
JEFFERSON, the Rev. Dr. CHARLES EDWARD, 32 years head of Broadway Tabernacle, 77, Sept. 12.
JENNINGS, DE WITT CLARKE, actor-director, 65, March 1.
JOHNSON, CHAUNCEY W., dean of hotel hosts, 104, Dec. 18.
JOHNSON, ROBERT UNDERWOOD, former Ambassador at Rome, ex-editor of *The Century*, poet, 84, Oct. 14.
KAUFER, EDOUARD ELIAS, portrait painter, 72, Nov. 29.
KELLOGG, FRANK BILLINGS, ex-World Court judge, ex-Secretary of State, 81, Dec. 21.
KERNOCHAN, FREDERICK, presiding justice Special Sessions, 60, Jan. 9.
KESSLER, Count HARRY, republican German statesman of Anglo-French birth, 66, Dec. 2.
KILRAIN, JAKE, fought John L. Sullivan seventy-five rounds in 1889, 78, Dec. 22.
KURINO, Viscount SHINICHRO, Japanese statesman, Harvard graduate, 86, Nov. 15.
LALOUX, VICTOR, architect, 87, July 13.
LA MONCA, FRANCIS, sculptor, 49, Feb. 5.
LANGDON, Dr. STEPHEN, Anglo-American Assyriologist at Oxford, 61, May 19.
LASZLO, PHILIP de, portrait painter, 68, Nov. 22.
LISSAUER, ERNST, author of "Hymn of Hate," 55, Dec. 10.
LLOYD, HORATIO GATES, financier, philanthropist, 70, Jan. 21.
LOEB, WILLIAM, secretary to President T. Roosevelt, 70, Sept. 19.
LOOMIS, EDWARD E., railroad promoter, 72, July 11.
LORIMER, GEORGE H., editor *Saturday Evening Post*, 69, Oct. 22.
LOSEE, FRANK, actor, 81, Nov. 14.
LUDENDORFF, General ERICH, German soldier and strategist, 72, Dec. 20.
LYMAN, ROBERT H., editor *World Almanac*, 73, Sept. 3.
McAULIFFE, JACK, world-champion lightweight, 71, Nov. 4.
McAVOY, CHARLES D., as Federal attorney secured conviction of Grover C. Bergdoll, 58, Feb. 28.
McAVOY, Associate Justice JOHN V. (New York Supreme Court), 58, April 12.
McCLUSKEY, the Rev. THOMAS J., ex-president Fordham University, 79, July 13.
MacCORMACK, DANIEL W., head of immigration United States Labor Department, 56, Jan. 1.
McCORMICK, HELEN, lawyer, social worker, 47, Feb. 21.
MacDONALD, JAMES RAMSAY, thrice British Prime Minister, 71, Nov. 9.
McINTYRE, JAMES, minstrel, 80, Aug. 18.
MacMONNIES, FREDERICK WILLIAM, sculptor, 73, March 27.
McNEILE, Lieut. Col. CYRIL, novelist, 48, Aug. 14.
MANN, HARRINGTON, painter, 72, Feb. 28.

MAPLESON, LIONEL S., librarian Metropolitan Opera, 72, Dec. 21.
MARCONI, GUGLIELMO, inventor of wireless, 63, July 19.
MARQUIS, DON, humorist, dramatist, poet, 59, Dec. 29.
MARSHALL, ERNEST, London correspondent *The New York Times* (retired), 70, Feb. 20.
MASARYK, THOMAS GARRIGUE, first President of Czechoslovakia, 87, Sept. 14.
MAYO, Rear Admiral HENRY THOMAS, U.S.N. (retired), commanded Atlantic Fleet in World War, 80, Feb. 23.
MEAD, EDWIN DOAK, author, worker for peace, 87, Aug. 17.
MELLON, ANDREW W., Secretary of Treasury under three Administrations, 82, Aug. 26.
MENDIS, the Rev. Dr. H. PERESTA, rabbi emeritus Shearith Israel, 85, Oct. 20.
MERRIAM, FRANKLIN A., newspaper publisher, 79, Jan. 23.
MILLS, OGDEN L., former Secretary of the Treasury, 53, Oct. 11.
MONK, WILLIAM, etcher, 73, April 7.
MORE, PAUL ELMER, author of "The Shelburne Essays," 72, Mar. 9.
MORLEY, Dr. FRANK, ex-Professor of Mathematics, Johns Hopkins, 77, Oct. 17.
MORRIS, EFFINGHAM B., financier, scientist, 80, Jan. 22.
MORROW, General JAY JOHNSON, U.S.A. (retired), once Governor of Panama Canal, 67, April 16.
MORSE, Jr., JOHN T., author, dean of Harvard Alumni, 97, March 27.
MOSES, HARRY, theatrical producer, 64, Aug. 31.
MOULAY, HAFID, ex-Sultan of Morocco, 61, April 4.
NEILSON, JAMES, philanthropist, 92, Feb. 19.
NEW, HARRY STEWART, Secretary in two Cabinets, 79, May 9.
NIVEN, WILLIAM, archaeologist, 86, June 2.
NOBLE, EDMUND, Boston editor, 84, Jan. 8.
O'BRIEN, MORGAN J., jurist, 85, June 16.
OCHS, Mrs. ADOLPH S., widow of publisher of *The New York Times*, 76, May 6.
ODELL, MAUDE, actress, 65, Feb. 27.
OGDEN, ROLLO, editor of *The New York Times*, 81, Feb. 22.
OLAYA, HERRERA, Dr. ENRIQUE, Colombian statesman, 56, Feb. 18.
OLIVEIRA, ALBERTO de, Brazilian man-of-letters, 79, Jan. 19.
OPPER FREDERICK, cartoonist, 80, Aug. 27.
PAGE, Dr. THOMAS WALKER, political economist, 70, Jan. 13.
PAINE, ALBERT BIGELOW, biographer, 75, April 9.
PARKER, LOTTIE B., playwright, author of "Way Down East," 78, Jan. 5.
PAULDING, Dr. FREDERICK, actor-author, 78, Sept. 6.
PEARSON, EDMUND LESTER, librarian, criminologist, 57, Aug. 8.
PEGRAM, GEORGE H., chief engineer of M.E.R. and I.R.T., 81, Dec. 23.
PEGRAM, HENRY, sculptor, 74, Mar. 26.
PEIXOTTO GEORGE da MADURO, portrait painter, 78, Oct. 12.
PERIN, Dr. CHARLES, engineer, 75, Feb. 16.
PERKINS, OSGOOD, actor, 45, Sept. 21.
PHILLIPS, Sir PERCIVAL, World War correspondent, 59, Jan. 29.
POLI, ZEFFARINO SYLVESTRE, sculptor, painter, showman, 77, May 31.
POLLARD, JOHN GARLAND, ex-Governor of Virginia, 65, April 28.
POLLEN, ARTHUR JOSEPH, gun fire-control inventor, 70, Jan. 28.
POMERENE, ATLEE, ex-Senator, prosecutor in Teapot Dome cases, 73, Nov. 12.
POPE, JOHN RUSSELL, architect, 63, Aug. 27.
PURDY, MILTON, jurist, 70, Feb. 11.
RAVEL, MAURICE, composer, 62, Dec. 28.
ROBERTS, ELMER, foreign correspondent, 74, Nov. 17.
ROBINSON, Senator JOSEPH T., of Arkansas, majority leader in Senate, 54, July 14.
ROCKEFELLER, JOHN D., 97, May 23.
ROGERS, HENRY M., Harvard's oldest alumnus, 98, Mar. 29.
ROLAND, RUTH, actress, 39, Sept. 22.
ROOT, ELIHU, former Secretary of State and War, 91, Feb. 7.
ROSALSKY, Justice JOSEPH, municipal jurist, 60, Sept. 3.
ROSENBAUM, SOLOMON G., merchant, philanthropist, 69, Dec. 26.

Ross, Captain John W., editor *The New Orleans States*, 69, Sept. 30.
Rosseau, Percival, animal painter, 78, Nov. 30.
Rothschild, Lord, British head of banking family, 69, Aug. 27.
Rutherford, Lord, scientist of Cambridge University, 66, Oct. 19.
Samuel, Harold, English pianist, 57, Jan. 15.
Schick, Lieut. Comdr. Jacob, inventor of dry shaver, 59, July 3.
Schuetzendorf, Gustav, baritone, 53, April 27.
Scott-Gatty, Alexander, actor, 61, Nov. 6.
Seligman, Jefferson, banker, 78, June 18.
Shattuck, Frank Garrett, merchant promoter, 77, Mar. 13.
Shedd, Fred Fuller, newspaper editor, 66, April 2.
Sheldon, Harry E., steel magnate, 74, Feb. 10.
Sheppard, Warren, marine painter, 81, Feb. 21.
Shilling, Alexander, landscapist, etcher, 77, Jan. 19.
Shipman, Samuel, dramatist, 53, Feb. 9.
Sloane, Henry T., merchant, 92, Sept. 18.
Snowden of Ickornshaw, Viscount, first Socialist Chancellor of British Exchequer, 72, May 15.
Soule, H. Percy, reporter, *The New York Times*, 67, Dec. 24.
Standing, Sir Guy, actor, 63, Feb. 24.
Stephens, D. Owen, astronomical painter, 43, June 23.
Stewart, Gordon, merchant, 51, Jan. 27.
Strauss, Frederick, banker, 72, Aug. 12.
Stubbs, Dr. George, dean of Trinity choirmasters, organist, 80, Dec. 26.
Sumner, Major Gen. Samuel Storrow, U.S.A. (retired), dean of cavalry officers, 95, July 26.
Szymanowski, Karol, composer, 54, March 29.
Talleyrand, Duc de, second husband of Anna Gould, 78, Oct. 26.
Tashi, Lama, spiritual head of Tibet, 54, Dec. 1.
Thomas, T. F. (Thomas T. Troy), minstrel, actor, 82, Feb. 9.
Thomson, Dr. Elihu, electric scientist, 83, March 13.
Thwing, Dr. Charles F., educator, Western Reserve U., 83, Aug. 29.
Tivnan, S.J., the Rev. Dr. Edward P., ex-president Fordham University, 54, March 31.
Tree, Lady (Helen Maud Holt), actress, 72, Aug. 7.
Unamuno, Don Miguel de, Spanish philosopher, 72, Dec. 31, 1936.
Underwood, John T., typewriter inventor, 80, July 2.
Uriu, Admiral Sotokichi, last survivor of Japanese graduates of Annapolis, 80, Nov. 11.
Vanderlip, Frank A., reorganizing banker, 72, June 29.
Vardon, Harry, golfer, 66, March 20.
Viele-Griffin, Frances, Franco-American poet, 73, Nov. 12.
Vorobier, Vladimir, embalmer of Lenin's body, 55, Oct. 31.
Vosper, Frank O., actor, 37, March 6.
Wharton, Edith, novelist, 75, Aug. 11.
Widor, Charles, organist, 93, March 12.
Willis, Dr. H Parker, political economist, 62, July 18.
Winsmore, Robert S., author, secretary of The Players, 61, Nov. 9.
Woolsey, George Muirson, president of A.S.P.C.A., 65, April 22.
Workman, Dr. William .Hunter, Himalayan explorer, 90, Oct. 7.
Wright, George, captained first Boston N.L. baseball team, 90, Aug. 21.
Wyckoff, Dr. John, dean New York University, 55, June 1.

INDEX

ADMINISTRATIVE Agencies, *see* Federal Administrative Agencies
Administrative Management, Reorganization Programs, 6–7
Report of President's Committee on, 31–32, 35
Adult Education, 946–954
Aery, William Anthony, 954
Agricultural Legislation,
Agricultural Adjustment Act, 19, 126–128
Agricultural Marketing Agreement, 19
Appropriation Act, 21
Chronology, 137–138
Farm Credit Act, 18–19
Farm Loan Interest Act, 20
Farm Tenant Act, 19
Soil Conservation Act, 19–20
Sugar Quota Act, 17–18
Agriculture and Allied Industries, 429–461
Agriculture, Conditions in, 429–436
Cotton Problem, 431–433
Farm Credit Conditions, 430
Federal Legislation, First Session, 435–436
Fruit and Vegetables, 431
Government Land Planning, 434–435
Grain and Cotton Crop Conditions, 430–431
Income, Price, and Production Factors, 429–430
New Farm Adjustment Legislation, 433–434
Wheat Adjustment Question, 433
Alaska, 198–201
Aviation, 200
Education, 200
Finance 198,
Fisheries, 198
Foreign Trade, 198
Fur Seals, 199
Health, 200–201
Minerals, 199–200
Railroads, 200
Reindeer, 199
Alden, Carroll Storrs, 350
Allen, H. K., 232
Altman, O. R., 14
Ambassadors, Accredited to U. S., List of, 91
U. S., List of, 91
American Political History, 1–67
Anthropology and Ethnology, 804–814
Acculturation, 813
Anthropometry, 805–806
Archaeology—Early Man in America, 807–808
—Eastern Areas, 809
—Plains, 808
—Mexico, Central and South America, 809–810
—Southwest, 808–809
Ethnology and Social Anthropology — Research, 810–811
Folklore and Music, 812–813
Heredity and Environment, 805
Linguistics, 806–807
Method and Theory, 813–814
Physical Anthropology—Growth, 804–805
Psychological Problems, 813
Race, 806
Religion, 811–812
Research, 810–811
Sociological Studies, 811
Technology, 812
Arabia, Ibn Saud and Pan-Arabic Movement, 86
Treaties with Iraq and Yemen, 86
Arabs, Attacks on Palestine Jews, 88
Blundan Congress, 88
Report of British Royal Commission, 87–88
Archaeology, 869–875
Age of Man, 869
Asia Minor, 869
Athens, 870–871
Egypt, 869–870
Greece, Other Areas in, 871–872
Guatemala, 869
India, 872
Iran (Persia), 874
Iraq, 872–873
Italy, 873
Museums, 874–875
Palestine and Neighboring Areas, 873–874
Syria, 874
Turkey, 874
United States, 869
Architecture, 887–891
City Planning, 888–889
Design, 889
Education, 890
General, 887
Housing, 887–888
Materials, 888
Modernism, 889–890
Press, The, 891
Private Building, 889
Public Interest, 890–891
Registration, 891
Small House, The, 888
Standardization, 888
Argentina, Sanitary Convention with, 76–77
Army, U. S., 288–305
Accomplishments of Army Personnel, 291–292
—Air Corps, 292
—Engineer Corps, 291
—Field Artillery, 292
—Infantry, 292
—Medical Corps, 291–292
—Quartermaster Corps, 291
—Signal Corps, 291
Air Corps,
—Equipment, 290, 291
—Operations, 292
—Schools, 295–296
Appropriations, 28
Armament, Motorization and Equipment, 290–291
—Air Corps, 291
—Cavalry, 290
—Coast Artillery, 290–291
—Engineers, 291
—Field Artillery, 290
—Infantry, 290
—Ordnance Department, 291
—Signal Corps, 291
—Tanks and Aircraft as Auxiliaries, 290
Chronology, 138
Civilian Conservation Corps, 293
Construction and Housing, 293
General Statistics, 297–299
—Adjutant General's Department, 298–299
—Corps of Chaplains, 297
—Finance Department, 298
—Inspector General's Department, 297
—Judge Advocate General's Department, 297
—Medical Corps, 298
—National Guard, 297
—Signal Corps, 298
Military Education, 294–297
—Army War College, 296
—Civilian Educational Institutions, 296
—Citizens' Military Training Camps, 296
—Foreign Officers, 296–297
—Foreign Schools, 296
—U. S. Military Academy, 296
National Defense, 288
Organization, 288–289
Panama Canal, 293–294
Radio System, Amateur, 292–293
Service, Decorations and Medals, 297
Strength, Regular Army, 289
—Corps Areas, By, 299
—National Guard, 289
—Need for Expansion, 289
—Organized Reserves, 289

—Strength and Losses, 300–305
Training, 289–290
—National Guard, 290
—Organized Reserves, 290
—Regular Army, 289–290
Art, Mellon Art Gallery Act, 21
Arts, The, 869–909
Archaeology, 869–875
Architecture, 887–891
Motion Pictures, 904–908
Music and the Opera, 891–898
Painting, 875–884
Sculpture, 884–887
Theatre, The, 898–903
Asia Minor, Archaeology, 869
Astronomy, 650–657
Asteroid, New, 653
Comets, 653–654
Eclipse in 1937, 651–652
Extra-Galactic Nebulae 656–657
Galaxy, The, 656
Instrumental Aids, 650
Interstellar Matter, 655–656
Jupiter and Saturn, 653
Mars, 652
Mercury, 652
Meteoritic Matter, 653
Moon, The, 652
Stars, The, 654–655
Sun, The, 650–651
Automotive Engineering, 693–699
Axles, Brakes and Tires, 697
Body, 698–699
Clutch, 695–696
Connecting Rod and Crankshaft, 694
Control and Equipment, 698
Cooling System, 694
Cylinder, Valve Gear and Piston, 694
Electrical System, 695
Engines, 693–694
Frame, 698
Fuel System, 694–695
Grilles and Sheet Metal, 698
Suspension, 697–698
Transmission, 696–697
Aviation, Commercial, 531–538
Aircraft Production, 536
—By Types, 536
Air Express, 534
Airports, 535
Airways, 535–536
Insurance, 534
Miscellaneous Operations, 534–535
Research, 537–538
—Aerodynamics, 537
—Blind Landing, 537–538
—Fuel Injection, 538
—Snow Static, 538
—Tricycle Landing Gear, 537
Scheduled Air Transportation, 532–533
—Air Mail, 532
—Equipment and Personnel, 533
—Fares, 533
—Mileage, 532
—Passengers, 532
—Statistics on, 533
Transoceanic Air Transport, 536–537
—Imperial Airways, 537
—Lufthansa, 537
—Pan American, 536–537

BAILEY, Catherine S., 891
Bain, Peter, 330, 522
Banking Affairs, 371–375
American Banking Association, 373, 375
—Declarations Adopted by, 371–373
Branch Banking, 372–373
Classification of Banks, 371
Federal Deposit Insurance Corporation, 373
General, 371
Government Expenditures and Budget, 372
Postal Savings, 372
Reconstruction Finance Corporation and Banking, 373
Resources and Liabilities of Insured Banks, 373, 374
Savings in American Banks, 373
Suspensions, 371
Taxation, 372
Bauer, John, 274
Baugh, Albert C., 838
Benson, George C. S., 11
Berry, Rose V. S., 884
Berryman, Florence Seville, 875
Biography, 826–830
Autobiographies, 829
Collective, 826
Foreign Subjects, 829–830
General, 826
Journalists, 828
Leaders of the Spirit, 827–828
Literary World, The, 828
Men of Action, 827
Men of Business, 828
Men of Public Affairs, 827
Miscellaneous Biographies, 828–829
Presidents, The, 826–827
Biology, 744–764
Black, Hugo L., Judicial Case of, 124–125
Supreme Court Appointment, 6, 15
Black, Richard B., 217
Botany, 754–758
Botanical Societies, 758
Ecology and Plant Geography, 757–758
Genetics and Cytology, 757
Morphology and Anatomy, 756
Mycology and Phytopathology, 756–757
Plant Physiology, 754–755
—Growth Substances, 754
—Light and Radiation, 755
—Other Problems, 755
—Photosynthesis, 754–755
—Virus Diseases, 755
Publications, Miscellaneous, 758
Taxonomy, 755–756
—Floras and Manuals, 756
—Higher Plants, 755–756
—Lower Plants, 756
—Plant Collections, 755
Botany, Economic, 759–763
Bud Sports Lead to Improved Strains, 761
Disease Resistance, 760–761
Farm and Horticultural Crops, Improvement of, 760
Filberts for Eastern U. S., New, 763
Fourth International Grassland Congress, 759
Grasses, Variation in, 759–760
Grass Seed, Native in Great Plains, 759
Houma Potato, A New Variety, 763
Hybrid Vigor in Sorghum, 763
Plant Physiology, Studies in, 762–763
Weed Control, 761–762
Brazil, U. S. Relations with, 77–78
Brown, Robert M., 720
Brussels Conference, 68, 71–72, 84–85, 97
Buck, Paul H., 823
Buenos Aires Conference, 2, 74, 76, 78
Burbank, W. S., 703
Burnett, Charles, 207
Bush, Ada Lillian, 492
Business and Finance, 357–428
Byles, Axtell J., 480

CALLANDER, W. F., 436
Campbell, Doak S., 928
Casualty and Miscellaneous Insurance, 412–415
Accident and Health Insurance, 414
Automobile Insurance, 412, 413
Burglary, Theft and Robbery Insurance, 414–415
Corporate Suretyship, 415
Experience of 1936, 412, 413
—Statistics, 413
Miscellaneous Public and Property Damage Liability Insurance, 414
Plate Glass Insurance, 415
Security Values, 415
State Regulation, 415
Workmen's Compensation Insurance, 413–414
Catholic Church, The Roman, 621–633
Apostolic Delegate to U. S., 624–625
Catholic Population in U. S., 622
Constitution Anniversary, Catholic Co-operation in, 625–626
Education, 626–627
Episcopal Changes, 624
Foreign Relations and Developments, 629–633
—Austria, 633
—Belgium, 632–633
—Canada, 631
—England, 631
—France, 632
—Germany, 630
—Ireland, 631–632
—Mexico, 630–631
—Sino-Japanese Relations, 629
—Spain, 629

Labor Problems 627–628
Legislation, 627
Missions, Catholic Support of, 625
National Catholic Welfare Conference, 622–624
Observance of Important Anniversaries, 626
Pope, The, 628
Sacred College, 628–629
Sacred Roman Rota, 629
Views of Catholic Women, 627
Chalmers, Henry, 392
Chemistry, Organic and Inorganic, 735–742
Atmosphere, Composition of, 735
Carcinogenic Hydrocarbons, 739
Catalytic Reactions, 738–739
Coal, Nature and Origin of, 736–737
Crystalline Vitamin A, 737
Distillation of Vitamins from Fish Liver Oils, 737
Fluorine Compounds, 736
Isomerism of the 2-Pentenes, 740
Local Anesthetics, New, 741–742
Ring Structures of Glycosides, 741
Separation of Isotopes, 735–736
Stereochemistry of Deuterium Compounds, 736
Sterols, 739–740
Tubercle Bacilli, Composition of, 738
Vitamin E, 737–738
Walden Inversion and Molecular Rearrangements, 740–741
Water, Composition of, 735
Chemistry, Physical, 727–729
Golden Jubilee, 727
Isotopes and Their Reactions, 729
Liquid and Built-Up Films, 728
Liquid State, The, 727–728
Reaction Kinetics, 729
Chew, Arthur P., 429
Child Labor, 599–602
Increase in, 599
Federal Child Labor Amendment, 599–600
Federal Legislation, 601
Publications, New, 602
Shrimp Industry Survey, 601–602
State Child Labor Legislation, 600
Tiff Mine Industry, 602
China, Capture of Chiang Kai-Shek, 78, 81
Chronology of Affairs, 109–110, 139–141
League of Nations Action in Sino-Japanese Conflict, 95–97
Undeclared War with Japan, 79, 81–83
U. S. Trade with, 3, 68
Chronology of Financial Events, 416–426
Chronology of International Affairs, 104–110
Berlin-Rome-Tokyo Axis, 105
Bulgaria, 109
Canada, 107
China, 109–110
Egypt, 109
Finland, 109
France, 107–108
General, 110
Germany, 108
Great Britain, 106–107
India, 109
Ireland, 109
Italy, 108
Japan, 109–110
Latin America, 109
League of Nations, 106
London-Paris Pivot, 105–106
Palestine, 109
President and International Affairs, 104–105
Regional, 110
Rumania, 109
Russia, 108–109
Spain, 109
Yugoslavia, 109
Chronology of National Affairs, 60–67
Aviation, 66
Court Rulings, 63
Crime and Disaster, 66–67
Labor, 64–66
National Legislation, 62–63
Politics, 63–64
President Roosevelt, 60–62
Chronology of the National Government, after Adjournment of Congress, 135–153
Agriculture, 137–138
Army, 138
Aviation, 138
Budgetary, 138–139
China, 139–141
Civilian Conservation Corps, 139
Coal, 141
Communications, 141
Congress, 141
Domestic Trade, 142–143
Flood Aid, 143
Foreign Relations, 143–144
Foreign Trade, 144
Government Reorganization, 144
Housing, 144–145
Judiciary, 145–146
Labor, 146–148
Maritime Commission, 148
Monetary, 148
Navy, 149
Neutrality, 149
Political, 149–150
Power, 150
President Roosevelt's Activities, 135–137
Railroads, 150–151
Relief, 151
Securities, 151
Social Security, 152
Taxation, 152–153
Unemployment, 153
Veterans, 153
Civilian Conservation Corps, 8, 23, 139
Civil Service, Legislation, 22–23
See also Federal Civil Service
Clement, Lewis M., 684
Coal and Coke, 469–475
Breaking, 472–473
Coal Industry and Production, 469
Coke, 473
Guffey-Vinson Act, 469
Labor Questions, 470
Mechanical Progress in Mining, 470–472
Mine Disasters, 473–474
National Bituminous Coal Commission, 469–470
Pumping, 473
Research, Studies, Tests, 474–475
Washing, 472
Collegiate Education, 920–928
Cone, Edwin F., 466
Congress, Work of, 14–31
Appropriations, 16–17
Judiciary Reform, 14–16
Legislation, 17–35
—Agriculture, 17–21
Agricultural Appropriation Act, 21
Agricultural Marketing Agreement, 19
Farm Credit Act, 18–19
Farm Loan Interest Act, 20
Farm Tenant Act, 19
Soil Conservation Act, 19–20
Sugar Quota Act, 17–18
—Art, Mellon Art Gallery Act, 21
—Banking, 21
Disaster Loan Corporation Act, 21
Federal Reserve Notes Act, 21
Reconstruction Finance Corporation Act, 21
Stabilization Fund Act, 21
—Bankruptcy, 21
Corporate Reorganization Act, 21
Municipal Debt Adjustment Act, 21
—Civilian Conservation Corps, 23
—Civil Service, 22–23
—Disaster Loan Corporation, 34
—Federal Power Commission, 35
—Flood Control, 23
—Housing, 25–26
—Immigration, 26
—Industrial Relations, 26
Apprentices' Welfare Act, 26
Unemployment Census, 26
—Interstate Compacts, 27–28
New England Minimum Wage Compact Act, 27–28
Oil Compact Act, 28
—Labor Standards Bill, 26–27
—Merchant Marine, 28
—National Cancer Institute Act, 21–22
—National Defense, 28
Army Appropriations, 28
Helium, 28
Naval Appropriations, 28

—Natural Resources, 28–29
Bonneville Dam Act, 29
Guffey-Vinson Bituminous Coal Act, 28
"Hot Oil" Extension Act, 28–29
Regional Development, 29
—Neutrality, 29–30
Act of 1937 29–30
Spanish Munitions Act, 29
—Railroad Retirement Act, 30 33–34
—Relief Appropriations, 30
—Reorganization of Executive Branch, 23–25
—Social Security Tax Act, 30
—Taxation, 30–31
—United States Housing Authority, 34–35
—Veterans Insurance Act, 31
Congress, Year in, The, 11–31
Composition by Parties, 13
Mechanism of, 13–14
Members of,
—House, 119–122
—Senate, 118–119
Partisan Politics, 12–13
President, The, and, 11–12
President's Messages to, 3–7, 17, 23–26, 29–31, 60–62
Special Session, 31, 141–142
Conservation, Roosevelt's Program, 9–10
See also Public Lands
Cook, Arthur B., 344
Copper, 476–477
Cotton and Grain Crops, 436–441
Barley, 441
Buckwheat, 439
Corn, 440–441
Cotton, 436–437
—Acreage, 437
—Crops and Comparisons, 436
—Value of Lint and Seed, 437
—Yields, 436–437
Feed Crops, 440
Grain Crops, 437
Grain Sorghums, 441
Oats, 441
Rice, 439–440
Rye, 439
Wheat, 437
—Spring, 438–439
—Winter, 438
County and Rural Government, 177–181
Bibliography, 181
City-County Consolidation, 178
County Consolidation, 178–179
Improvements in Local Government Personnel, 180
—Maryland, 180
—New York, 180
—Wisconsin, 180
Local Home Rule, 178
Regional and Local Planning and Zoning, 180
—New Mexico, 180
—New York, 180
—North Carolina, 180
—Oregon, 180
—Pennsylvania, 180
—Tennessee, 180
Reorganization and Reform in County Government, 179–180
—California, 179–180
—Nebraska, 180
—New York, 179
—Pennsylvania, 179
—Tennessee, 179
—Texas, 180
—Virginia, 179
State Control or Supervision, 177–178
Surveys, 181
—New Jersey, 181
—New York, 181
Cox, Douglas F., 409
Cox, Philip W. L., 914
Cramer, Lawrence, W., 211
Crime Control, 562–567
Federal Prison Industries, 563–564
Federal Probation Service, 565
Juvenile Delinquency, 566–567
Parole, 566
Prisons, 562–563
Probation in General, 565–566
Social Security, 567
State Probation Service, 564–565
—Michigan, 564
—Missouri, 564
—New Hampshire 564
—North Carolina, 564
—Tennessee, 564
—Utah, 564
—West Virginia, 564–565
Statistics, Criminal, 562
Criticism and Belles Lettres, 833–837
Collections, 836–837
Contemporary, 833–834
Critical Essay, The, 835–836
General, 833
Individual—American, 834
—English, 834–835
Marxist Criticism, 837
Miscellaneous, 837
Nineteenth Century, 835
Personal Essay, The, 836

DAIRY Industry, 442–444
Consumption of Dairy Products, 443
Control and Regulatory Programs, 443
Cow Numbers and Milk Production, 442
Dairy Herd Improvement, 444
General, 442
Improved Quality of Dairy Products, 444
Manufactured Dairy Products, 442
Storage Stocks and Imports, 442–443
Dale, George Irving, 850
Davis, Nathaniel P., 89
Davis, R. O., 214
Debatin, Frank M., 946
Defense and Armament, 288–305
Dennis, L. H., 942
Dinwiddie, Courtenay, 599
Diseases of Plants, 444–447
Cotton Seedling Diseases, 446
Downy Mildews, 445
Dutch Elm Disease 446–447
Fruit Diseases, 446
Fungous Diseases, Prevalence of, 444–445
Grain Rusts and Smuts, 446
Other Tree Diseases, 447
Powdery Mildews and Other Vegetable Diseases, 445–446
District of Columbia, 219–221
Fiscal Relations, 219
Proceedings in Adoption, 220
Other Legislation, 220–221
Red Rider, 220
Tax Changes, 219–220
Dominican Republic, Difference with Haiti, 75
Dorr, Harold M., 1
Dunn, Halbert L., 780

EARTHQUAKES and Volcanoes, 701–703
Earthquake Locations and Observations, 702
—Foreign Areas, 701
—United States, Alaska, Hawaii, 701
Related Measurements, 702–703
Seismological Stations, 701–702
Volcanoes, 703
Eastern Churches, The, 633–635
Carpatho-Russians (Ruthenians), 633–634
Hellenic Orthodox Church, 633
Orthodox Churches Abroad, 634–635
Orthodoxy and the Movement for Church Unity, 635
Other Orthodox Churches, 634
Russian Orthodox Church, 633
Economic and Business Conditions, 357–365
Agriculture, 358
Automobile Sales, 361
Bank Clearings, 359–360
—Statistics on, 360
Building Construction, 361–362
Business Indexes, General, 362–365
—Bureau of Labor Statistics Price Index, 365
—Commodity Index Numbers and Labor Conditions, 362–364
—Factory Employment and Payrolls, 364
—Industrial Production, 363
Capital Flotations, New, 359
—Statistics on, 359
Commercial Failures, 362
Exports and Imports, 360–361
High Hopes and Disappointment, 357–358
Industrial and Railroad Dividends, 362

Iron and Steel Operations, 361
Manufacturing and Mining Industries, 358–359
Railroad Industry, 360
Security Markets, 360
Economic Geology, 703–706
Coal, 705–706
Metalliferous Deposits, 703
Petroleum and Gas, 704–705
Salt Basins of the Permian, 705
Underground Waters, 706
Edson, Howard Austin, 444
Education, Adult, 946–954
American Association for Adult Education, 949–950
American Association of University Women, 950–951
General Survey, 946–947
League for Political Education, 951
Library and Reading, 953–954
Parent Education, 951–952
Public Schools, 948–949
Radio and Forum, 952–953
University Participation, 947–948
Education, Collegiate, 920–928
Anniversaries and Celebrations, 926–927
Co-operative Projects, 923–924
Enrollment, 921–922
Gifts and Bequests, 925–926
Finance, 924–925
Publications, 927–928
Presidential Changes, 924
Religion, Survey of, 924
Trends in, 922–923
Education, Elementary, 910–914
Enrollments, 910
Indian Education, 912
Kindergarten Education, 912–913
Mental Testing, 911
Parent Education, 911
Publications, 913–914
Radio Education, 912
Salaries, Teachers', 910–911
Social Education, 913
Visual Aids, 911–912
Education, Negro, 954–964
Adult Education, 958
—Aid to Farmers, 958
—Consumer Co-operation, 958
—Virginia, 958
Elementary Education, 955–956
—Florida, 956
—Virginia, 955–956
General Survey, 954–955
C. C. C. and the Negro, 960–961
—Current Work, 960
—Relation to Life, 960–961
—Trained Leadership, 960
Health Education, 959–960
—Death Rates, 960
—Health Week, 959–960
—Regional Conferences, 960
Higher Education, 958–959
—Health Service, 959
—Problems, 958
—Scholarship Societies, 959
—Self-Criticism, 959
—Women, 959
National Youth Administration, 961
—Federal Conference, 961
—Summary of Work, 961
Race Relations, 962–964
—Government Agencies, 962
—Jeanes Plan, 962
—Lynching, 962
—Negro Organization Society of Virginia, 963
—Northern Urban Areas, 963
—Seminar Conference, 963
—Social Welfare, 963
—Southern Education Foundation, 963
—Teacher Co-operation, 962
—Teachers College Project, 963–964
—Virginia Commission on Inter-racial Co-operation, 962
Rosenwald Awards, 961–962
Rural Education, 955
—Georgia, 955
—Rosenwald Fund, 955
Secondary Education, 956
—Limitations, 956
—Negro Viewpoint, 956
—Virginia, 956
—Vocational Needs, 956
Vocational Education, 957–958
—Hampton Institute, 957
—Institute Schools, 957
—Relation to Industry, 957–958
—Survey, 957
Education, Professional, 928–942
Business Education, 934–936
—Current Trends, 934–935
—Professional, 935–936
Engineering Education, 932–934
—Accredited List Published, 932–933
—Committee on Engineering Schools, 933
—Constitution and By-Laws, Changes in, 933–934
—Curricula, Types of, 933
—Engineers' Council for Professional Development, 932
—Graduate Instruction, 934
Legal Education, 930–931
—Admission Practices, 930–931
—American Bar Association, 930
—Approved Schools of Law, 931
—Graduate Instruction, 931
—Post Admission Training, 931
Medical Education, 928–930
—Age of Graduates, 930
—Enrollments, 930
—Internships and Residencies, 930
—Length of Medical Course, 930
—Licensure, 929
—Preliminary Education, 929–930
—School Survey, 928–929
Nursing Education, 937–939
—Accrediting Agencies, 938–939
—Association of Collegiate Schools of Nursing, 937–938
—Enrollment, 939
Public Administration Education, 939–941
Social Work, Education for, 941–942
Teacher Education, 936–937
—American Association of Teachers Colleges, 936–937
—In-Service Education, 937
—Nation-Wide Study of Problems, 937
—Standards and Trends, 936
Theological Education, 931–932
—American Association of Theological Schools, 932
—General Survey, 931–932
Education, Secondary, 914–920
Adjustments, 914–915
Curriculum Innovations, 920
Enrollments, 914
Expansion, 918–919
Legislation, Educational, 916–918
—Compulsory Attendance, 916–917
—District Consolidations, 917
—Extra-Mural Activities, 917
—Federal Co-operation, 917–918
—Free Textbooks, 916
—George-Deen Act, 917
—Precautionary and Restrictive Laws, 916
—Social Security, 917
—State Control, 916
—Tax Distribution, 916
—Teacher Pensions, 917
Platforms and Programs, 915–916
Supplementations, 919–920
Education, Vocational, 942–946
Conclusions on, 945–946
Extension of Program, 945
Federal Funds, Delay in Release of, 942–943
General Trend, 942
Occupational Adjustments, 943–945
Raising of Training Levels, 945
Trade Schools, 943
Training Opportunities, 944
Edwards, Gurden, 371
Egypt, Admission to League of Nations, 86
Archaeology, 869–870
"Blue Shirt" Organization and Riots, 87
Independents Arrayed against King and Great Britain, 109
Investiture of King Faruk, 86–87
Montreux Convention, 86
Nahas Pasha Thrown from Power, 86
Elections, Congressional, 59
Municipal, 60
State, 59–60
—Issues Decided, 60

Electoral Legislation, 171–174
Absent Voting, 173
Corrupt Practices, 173
General Elections, 172–173
Initiative, Referendum and Recall, 173
Nominations, 171–172
Notable Changes, 171
Party Organization, 172
Registration, 171
Special Acts, 173–174
Electrical Engineering, 673–684
Electronics, 678
Generation of Electricity, 674–675
—Capacity, 674
—Hydro-electric Construction, 675
—Hydrogen Cooling, 675
—Pressures and Temperatures, 674
—"Steamotive" Unit, 674
—Steam Storage, 674–675
Illumination, 678–679
Industrial Use of Electricity, 676–677
Load Building, 676
—Air Conditioning, 676
—Domestic Consumers, 676
—Farm Electrification, 676
Machinery, Electrical, 679–680
—Antimony in Storage Battery Plates, 680
—Copper Oxide Rectifier, 679–680
—High Speed Frequency Changes, 679
—Mercury Arc Rectifiers, 679
—Metal Heaters, 680
—Spot and Seam Welders, 680
—Synchronous Pump Motors, 679
—Transformers, 680
—Voltage Switches, 680
Meters and Instruments, 680–682
—Cable Faults, 681
—Conductor Potential, 681
—Electrical Computors, 681
—Instrument Materials, 680–681
—Noise Analysis, 681
—Oscillograph, 681–682
—Smaller Meters, 680
—Special Instruments, 681
Relaying and Control, 677–678
Telephony, 682–684
—Amplifiers, 682–683
—Call Registers, 683
—Coaxial Cable, 683
—Sound Reproduction, 683–684
—Telephone Devices, New, 683
Transmission and Distribution, 675–676
—Circuit Breakers, 675
—Current Limiters, 676
—High Voltage Cables, 675
—Lightning Protection, 675–676
Transportation, Electric, 682–683
—Coal Mining, 682
—Pennsylvania Railroad, 682
—Railroads, Other, 682
—Ships, 682
—Trolley Cars, 682
Electrochemistry, 742–743
Electric Furnace and Its Products, 742
Electrodeposition, 742
Electronics, 743
Fused Electrolytes, 742
Organic Electrochemistry, 742–743
Powder Metallurgy, 743
Problems Awaiting Solution, 743
Elementary Education, 910–914
Ellsworth, D. W., 222
Employment Conditions, 593–598
Building Construction, 595
Farms, 596
Indexes of Employment, 593–594
Manufacturing, Employment in, 593
Mining, Employment in, 594–595
Part-Time Employment, 597–598
Public Employment and Relief Work, 597
Public Utilities, Trade and Hotels, 596–597
Railroads, Index of Employment, 595–596
Volume of Unemployment, 598
Engineering and Construction, 658–700
English Language and Literature, 838–846
Chaucer, 841
Contemporary, 846
Eighteenth Century, 845
Elizabethan Dramatists, 843
English Language, The, 838
General, 838
General Literature, 838–839
Middle English Literature, 840–841
Nineteenth Century, 845–846
Old English Literature, 839–840
Seventeenth Century, 844–845
Shakespeare, 843–844
Sixteenth Century, 841–842
Spenser, Edmund, 842–843
Enslow, H. R., 252
Entomology, 751–753
General Works and Juvenile Texts, 752
Historical and Legendary, 752–753
Meetings, 751
Necrology, 753–754
Personnel, 753
Research and Publications, 751–752
Technical Works, 753
Texts and Monographs, 752
Equatorial Islands, American, 217–218
Colonization and Government, 217
Description, 218
Development, 218
Importance of the Islands, 218
Status of American Possession, 218
Excavation, *see* Archaeology
Exploration, American, 720–723
Arctic, 720–721
Asia, 722
Far East Islands, 722–723
North America, 721
South America, 721–722
South Pacific, 723

FAR EAST, Internal Conditions in, 78–81
Undeclared War in, 79, 81–83
U. S. Policy in, 2–3, 68, 70–72, 83–85
Federal Administrative Agencies, 31–35
Changes in, 32–33
Disaster Loan Corporation, 34
Employees, Number in Executive Branch, 33
Farm Security Administration, 33
Federal Power Commission, 35
President's Committee on Administrative Management, 31–32
Railroad Retirement Board, 33–34
United States Housing Authority, 34–35
Federal Administrative Organization, 111–122
American National Red Cross, 117
Board of Surveys and Maps of the Federal Government, 117
Cabinet, 111–116
Civil Service Commission, 116
Commission of Fine Arts, 117
Commodity Credit Corporation, 117
Farm Credit Administration, 117
Federal Board for Vocational Education, 117
Federal Communications Commission, 117
Federal Co-ordinator of Transportation, 117
Federal Deposit Insurance Corporation, 117
Federal Emergency Administration of Public Works, 117
Federal Emergency Relief Administration, 117
Federal Home Loan Bank Board, 117
Federal Housing Administration, 117
Federal Power Commission, 117
Federal Reserve Board, 116
Federal Trade Commission, 116
General Accounting Office, 116
Interstate Commerce Commission, 116
National Academy of Sciences, 117
National Advisory Committee for Aeronautics, 117

National Archives, 117
National Labor Relations Board, 117
National Mediation Board, 117
National Youth Administration, 117
Pan-American Union, 117
Reconstruction Finance Corporation, 117
Securities and Exchange Commission, 117
Smithsonian Institution, 117
Social Security Board, 117
Tennessee Valley Authority, 117
U. S. Board of Tax Appeals, 117
U. S. Employees' Compensation Commission, 116
U. S. Maritime Commission, 117
U. S. Railroad Administration, 116
U. S. Tariff Commission, 116–117
Veterans' Administration, 117
Federal Civil Service, 131–135
Executive Action, 132
Executive Civil Service, Growth of, 132–133
Honesty under Merit System, 134–135
Legislation, 131–132
Merit System in the States, 133–134
Overtime in, 135
Report of President's Committee on Administrative Management, 135
Federal Judicial Organization, 122–124
Circuit Courts of Appeals, U. S., 122–123
Court of Claims, U. S., 123
District Court, U. S., for the District of Columbia, 123
Supreme Court, 122
U. S. Attorney's Office, 123–124
U. S. Court of Appeals for the District of Columbia, 123
U. S. Court of Customs and Patent Appeals, 123
U. S. Customs Court, 123
U. S. Marshal's Office, 123
Federal Prosecutions and Judicial Decisions, 124–131
Case of Mr. Justice Black, 124–125
Firearms Act, 130
Gold, 130
Government Control of Business, 127–129
—A. A. A. Marketing Control, 127–128
—Anti-Trust Laws, 128
—Commodity Exchange Act, 128
—Holding Company Act, 127
—Other S. E. C. Cases, 127
—Robinson-Patman Act, 128–129
—Strike Breaking, 129
Government Corporations, 129–130
—Federal Deposit Insurance Corporation, 130
—Home Owners Loan Corporation, 129–130
—Tennessee Valley Authority, 129
Labor Problems, 129
—National Labor Relations Board, 129
—Norris-La Guardia Act, 129
—Sit-Down Strike, 129
Prison Labor, 130–131
Public Works Administration, 130
Taxation, 125–127
—Inter-Governmental Immunities, 125
—Silver Tax, 126
—State Jurisdiction to Tax, 126
—Taxes Arising out of the A. A. A., 126–127
—Wire Tapping, 130
Federal Surveys and Maps, 259–260
Composite Map of the United States, 260
Los Angeles County Map, 260
National Topographic Mapping, 259
Puerto Rico Survey, 260
State Maps, 259–260
Felt, E. Porter, 751
Fiction, 815–820
American Past, The, 815–816
Americans Abroad, 817–818
Americans at Home, 818–819
Barnes, Djuna, 818
British Fiction, 818–819
City Realism, 816–817
Hemingway, Ernest, 817
Negro Fiction, 820
Short Story and "Novella," 819–820
Translations, 819
Financial Events, *see* Chronology
Fink, Colin G., 742
Fire Insurance, 407–409
Accessory Lines, 408
Fire Premiums, 408
Fire Waste, 407
Trends, 408–409
Fisheries, 454–457
Alaska, 454–455
Conservation Studies, 456–457
Fish Culture, 455
Fur Seals, 455
General, 454
Oyster Culture, 457
Salmon Research, 456
Stream Pollution, 457
Technology, 455–456
U. S. Fisheries, Statistics on, 454
Fleming, John A., 710
Flood Control, Whittington Act, 23
See also Waterways and Harbors
Foreign Exchange, 377–381
Dollar, Fluctuation in Relation to £, 378–379
Far Eastern Currencies, 380–381
Former Gold Bloc Countries, Relation of Currency to Dollar, 379
General, 377
Latin American Exchanges, 380
Restrictions and Stabilizing Factors, 381
South American Currencies, 379–380
Sterling Bloc, 377–378
Foreign Policy, Brussels Conference, 68, 71–72, 84–85
Co-operation with League of Nations, 72–94
Far Eastern, 2–3, 68, 70–72, 83–85
"Good Neighbor," 2, 74, 75
Neutrality and Trade, 1–2
Roosevelt's Chicago Speech, 2, 71, 83, 93–95
Spanish Civil War, 68–70
Foreign Relations, Chronology, 143–144
See also International Affairs
Foreign Service of the United States, 89–92
Administration, 89
—Board of Examiners, 89
—Board of Foreign Service Personnel, 89
—Regulations, 89
Officers' Training School, 89–90
—Foreign Service School Board, 90
—Purposes, 89–90
Personnel, 90–92
—Changes, 90
—Classification, 90
—Diplomatic, 91–92
—Losses, 90
—Promotions, 90
Foreign Tariffs and Commercial Policies, 392–396
Current Situation, 392
Encouraging Conditions and Forces, 394
Prospect for 1938, 395–396
Trade Barrier Liberalization, 392–394
Trade Restriction, 392
Uncertainties and Restrictive Forces, 394–395
Foreign Trade, 381–391
Commodity Character of 1936 Exports, 385–387
Commodity Character of 1936 Imports, 387–388
Expansion in 1936, 381–382
Exports, Imports, and Balance of Trade, 382
Exports, Geographical Distribution of, 383–384, 388–390
Foreign Trade by Continents and Great Trade Regions, 389
Foreign Trade for Ten Months of 1937, 382–383
Imports, Geographical Distribution of, 384–385
Imports, Sources of, for 1936, 390–391
Merchandise, by Commodity Classes, 383
—by Economic Classes, 386
Forestry, 457–460
Farm Forestry Act, 458–459
Fire, 459–460

Flood Control, 459
Recreational Developments and Factors, 458
Reforestation, 460
Restoration of Forest Resources, 457–458
Wild Life, 459
Frondel, Clifford, 707
Frothingham, Francis E., 396

GENEVA Research Center, Report on League of Nation and Associated Agencies, 92–104
Geology *see* Economic Geology, also State Geological Surveys
Geophysical Sciences, 701–726
Gerlach, Edgar M., 562
Germanic Languages and Literature, 847–850
Goethe, 848–849
Later Periods, 849–850
Linguistic Reorientation, 847
Medieval German, 848
Nietzsche, 849
Philology, 847
Scandinavian, 847–848
Gold and Silver, 462–466
Economic Aspect of Gold, 462–463
Effect of American Silver Purchases, 465
Gold in the French Crisis, 463
Gold Reserves and Disposition, 464
Great Britain's Sterilization of Gold, 463
Silver Coinage and Purchase Acts, 465
Silver Mining, 464
U. S. Gold Position, 463
World Production of Gold, 463–464
World Production of Silver, 465–466
"Gold Clause," Judicial Decisions on, 130
Good Neighbor Policy, 2, 74, 75
Goodrich, Ernest P., 282
Gordon, Cyrus H., 862
Gordon, Myron, 744
Grain Crops, *see* Cotton and Grain Crops
Greece, Archaeology, 870–872
Greek Literature, 859–862
History and Civilization, 860–861
Language, Literature, and Literary Criticism, 859–860
Loeb Classical Library, 859
Manuscripts and Text-Criticism, 860
Miscellaneous, 862
Philosophy and Religion, 861–862
Griswold, Erwin N., 124
Gruening, Ernest, 198–201
Guam, 214–216
Agriculture, 215
Banking, 215
Education, 216
Government, 215
Health and Sanitation, 215–216
History, 214–215
Population, 215
Trade and Commerce, 215
Guatemala, Archaeology, 869

HAIDUCK, Andrew F., 531
Haiti and the Dominican Republic, 75
Hall, R. Dawson, 469
Harbors, *see* Waterways and Harbors
Hardy, Edward R., 407
Hardy, E. R., Jr., 633
Harris, Joseph P., 23
Hawaii, 201–203
Area and Population, 201
Commerce, 201–202
Commercial Aviation, 203
Finances, 203
Government, 201
Motor and Rail Traffic, 203
Pineapples, 202
Sugar, 202–203
Tourist Trade, 203
Hayes, H. K., 759
Heck, N. H., 701
Helium, Legislation on, 28
Highways, 512–516
Broadened Federal-Aid Program, 512–513
Construction in Federal Areas, 513
Federal-State Co-operative Work, 512
Financing, Problems of, 514–515
Planning Surveys, 515–516
Program to Relieve Unemployment, 513–514
Safety, 516
Types of Road Completed, 512
Hines, Frank T., 306
Hiscock, Ira V., 776
History, 823–826
Asia, 826
Colonial History, 825
Constitutional History, 824
Diplomatic History, 824
Europe, 825–826
Frontier Themes, 825
General Histories, 823
Historiography, 825
Local History, 825
Military History, 824
Period Histories, 823–824
Social History, 824–825
South America, 826
State History, 825
Tendencies, 823
Honduran-Nicaraguan Boundary Dispute, 76
Hoover, Thomas N., 59–60
Hormell, Orren C., 177–181
House of Representatives, U. S., Members of, 119–122
Housing, Chronology, 144–145
Creation of U. S. Housing Authority, 34–35
Financial Details, 572
Insured Mortgage System, 568
Modernization Loan Insurance, 572
President's Program, 10–11
Rental Housing Program, 570–572
Underwriting and Technical Achievements, 568–570
Wagner Housing Act, 25–26, 37
Hubbard, Frank W., 910
Huebner, S. S., 357, 365
Hulin, Wilbur S., 787
Hunter, Merlin H., 225
Huntington, Whitney C., 658
Hutchens, John K., 898

IMMIGRATION and Population, 540–551
India, Archaeology, 872
New Constitution, 109
Indo-European Linguistics, 865–867
Baltic and Celtic, 867
General Contributions, 865–866
Germanic, 866–867
Greek, 866
Hittite, 866
Indo-Iranian, 866
Italic, 866
Linguistic Society of America, 865
Tocharian, 866
Ingalls, Walter Renton, 462, 475
Insect Pests and Plant Quarantine, 447–454
Ants, 450
Beekeeping, 450
Black Stem Rust Control, 453
Bureau Activities, Organization of, 447
Cattle Grubs, 450
Cotton Insects, 449–450
Dog Tick, 450
Dutch Elm Disease Eradication, 452
Foreign Parasite Introduction, 450–451
Foreign Plant Quarantines, 453–454
Fruit Flies, 451–452
Fruit Pest Research, 447–448
Grain Pest Investigations, 448
Grasshoppers, 453
Gypsy Moth and Brown-Tail Moth Control, 452
Insecticide Developments, 451
Japanese Beetle, 451
Mosquitoes, 450
Peach Mosaic Control, 452
Phony Peach Disease, 452
Pink Bollworm Control, 453
Tobacco Insects, 449–450
Transit Inspection, 454
Tree Beetles, 448
Vegetable Pests, 448–449
White Pine Blister Rust Control, 452–453
Interdenominational Activities, 611–620
Brotherhood Day, 618
Church and Co-operatives, 620
Church Unity, 611–612
Edinburgh, Issues at, 615–616
Emergency Peace Campaign, 618–619

Federal Council of Churches, 616–617
—Far East, 616–617
—Peace and Goodwill, 616
—Religion and Health, 616
—Spain, 617
Foreign Missions, 617–618
Free Christians, 620
Home Missions, 617
Joint Effort in the United States, 616
New Christian Unity Commission, 612–613
Oxford Conference, 613–615
Williamstown Conference of Jews and Christians, 618
World Alliance, 619–620
World Sunday School Association, 620
Internal Commerce, Conditions of, 492–494
Basic Production, 492
Employment and Purchasing Power, 493–494
Individual Industries, 493
Industrial and Merchandise Distribution, 493
Outlook, 494
Prices, Profits and Finance, 494
International Affairs, Affecting the U. S., 68–110
See also Chronology
International Labour Organization, U. S. Participation in, 93, 102–104
Investor, Public Protection of, 396–401
Conclusion on, 401
Credit Factors, 400–401
Industrial Problem, 397–398
Investment Co-operation, Need for, 396–397
Position of Investor and Issuer, 396
Public Policy, 398
Regulatory Measures, 399–400
S. E. C. and N. Y. Stock Exchange, 398–399
Iran (Persia), Archaeology, 874
Iraq, Archaeology, 872–873
Iron and Steel, 466–468
Comparative Production, 466
Exports, 467
Industrial Outlook, 468
Industrial Trend, 466
Metallurgical Research, 468
"Prince or Pauper," 466–467
Progress in Alloy Steel, 467
Stainless Steels, 467–468
Irrigation, *see* Reclamation and Irrigation
Italy, Archaeology, 873
Chronology of Affairs, 108

JACK, Peter Monro, 815, 833
Jackson, Charles E., 454
Japan, Chronology of Affairs, 109–110
League of Nations Action in Sino-Japanese Conflict, 95–97
Indeclared War with China, 79, 81–83
U. S. Policy in, 3, 68
Jensen, Jens P., 244, 250
Jews, Proposal of Independent Jewish State in Palestine, 87–88
Trouble with Arabs in Palestine, 87–88
Zionist Conference in Zurich, 88
See also Judaism
Joerg, W. L. G., 259
Johnson, Fred W., 269
Johnson, William R., 501
Jones, Howard P., 186
Judaism and Jewish Communal Affairs, 636–641
Aid for Overseas Communities, 639
American Reaction to Nazi Policies, 636
Anti-Jewish Agitation, 640
Education, 641
Germany, Events in, 636
Jewish Communal Life, 640–641
Movements for Inter-Group Good Will, 640
Other European Areas, Events in, 638
Palestine Problems, 638–639
Poland, Events in, 637–638
Social Welfare, 641
Zionist Movement, 641–642
Judiciary, Chronology of Activities, 145–146
Plans for Reform of, 4–6, 15–16
See also Supreme Court

KAUFMANN, F. W., 847
Killough, Lucy Winsor, 238
Kramer, Roland L., 381

LA BEAUME, Louis, 887
Labor and Labor Legislation, 573–603
Labor Conditions, 576–593
Cost of Living, 581
Employment, General Trend of, 577
—Trend in Manufacturing, 577
Federal Building, 586–587
Federal Legislation, 588–589
—Bituminous Coal Act, 589
—Farm Tenancy, 589
—Interstate Compacts, 589
—Labor Standards for Apprentices, 588
—Railroad Retirement, 588
—Relief, 588–589
—U. S. Housing Act, 589
General Motors Settlement, 582–583
Glass Industry Settlement, 583
Hours of Labor, 580–581
Housing, 586
Industrial Relations, 581–582
Labor Meetings, 586
Labor Movement, 585–586
Local Government Housing, 587–588
Maritime Agreement, 582
Old-Age Retirement, 584
Private Construction Activities, 588
Public Assistance, 584
Railroad Retirement Act, 585
Social Security, 584
Social Security Act Coverage, 585
State Labor Legislation, 589–592
—Arbitration and Mediation, 591
—Child Labor, 589
—Collective Bargaining, 590–591
—Discriminations, 592
—Employment Agencies, 591–592
—Hours of Labor for Men and Women, 589–590
—Hours of Labor for Women and Minors, 590
—Labor Departments, 591
—Minimum Wages, 591
—Occupational Diseases, 592–593
—Old-Age Assistance, 592
—Payment of Wages, 591
—Social Security, 592
Strikes, 584
Unemployment Compensation, 584–585
Unemployment Registration and Placement, 576–577
U. S. Steel Corporation Agreement, 583–584
Wages, 577–580
—Farm, 579
—Geographical Variations in, 578–579
—Minimum, 579–580
—On Public Contracts, 580
—Union Wage Scales, 579
Lane, George S., 865
Latin America, U. S. Relations with, 73–78, 109
Chronology of Events in, 109
Good Neighbor Policy, 74
Haiti and the Dominican Republic, 75–76
Honduran-Nicaraguan Boundary Dispute, 76
Interests in Mexico, 74–75
New Division of the American Republics in State Department, 73–74
Sanitary Convention with Argentina, 76–77
United States and Brazil, 77–78
Latin Literature, 854–858
Classical Latin Authors, 854
Epigraphy, 857
General, 858
Language and Grammar, 857
Later Latin Literature, Including Medieval, 855–856
Literary History and Criticism, 856
Loeb Classical Library, 854
Palaeography and Text-History, 856–857
Philosophy and Religion, 858
Political, Social, and Economic History, 857–858
Laughlin, Harry H., 540
Law Reform, 174–177
American Bar Association, 176
American Judicature Society, 175–176

American Law Institute, 176
Bar Admission Standards, 174–175
Conference on Comparative Law, 176–177
Lead, 477–478
League of Nations and Associated Agencies, 92–104, 106
Action on British Royal Commission Palestine Report, 88
Anti-Drug Work, 99–100
Chronology of Affairs, 106
Disarmament Activities, 93, 98–99
Economic Conference, 93
Economics and Finance, 97–98
—Trade Treaties Program, 97
—Tripartite Monetary Agreement, 97
Health Work, 99
Intellectual Co-operation of U. S., 101
International Labor Organization, 102–104
—Governing Body Sessions, 103
—Labor Office Conventions, 103–104
—U. S. Participation in, 102–104
—Washington Textile Conference, 102–103
New York World's Fair, Invitation to, 101–102
Reforms Considered, 95
Social and Humanitarian Activities, 100–101
Sugar Conference, 93
Transit Organization, 98
Treaty Series, U. S. Contributions to, 102
U. S. Relations with, 92–94
World Court, 102
Lesser, Alexander, 804
Libraries, 964–969
Adult Education, 965
American Library Association, 968
Federal Relations with Libraries, 964
Friends of Library Groups, 967–968
Gifts, Grants and Buildings, 967
National Library Plan, 964
Personnel, 966–967
Publications, 968–969
Research, 965–966
Service of Established Libraries, 965
Training, 966
Life Insurance, 401–407
Amount of Insurance, 402
Assets, 401
Dividends, 404
Fraternal Insurance, 405, 406
General, 401
Group Insurance, 405
Industrial Insurance, 405, 406
Investments, 403
Mortality and Disability, 404
New Business and Insurance, 401–403
Ordinary, 402
Payments to Policy Holders, Interest Rate, 405
Policy Loans, 403–404
Proposed New York Insurance Law, 406–407
Surrenders and Loans, 404
Litchfield, Edward H., 11
Literature and Language, 815–868
Lubin, Isador, 576
Lundberg, Emma O., 552
Lybyer, Albert Howe, 78

MACDONALD, Thomas H., 512
Magoffin, Ralph V. D., 869
Manufactures and Transportation, 486–539
Manufacturing, Conditions in, 486–492
Automobile Production, 490–491
Commodity Prices, 489–490
Conclusion on, 492
Construction, 491–492
Consumers' Goods Industries, 487–488
Electric Utilities and Railroads, 488–489
Foreign Trade, 490
Industrial Earnings and Dividends, 490
Industrial Production, 486–487
Iron and Steel, 489
Labor and Employment, 490
Petroleum and Refinery Products, 488
Marine Insurance, 409–412
"Builders' Risks," 411
Cargo Business, 411
Cost of Repairs, 410
Division of Business, 412
Hull Business, 410
London Market, 410–411
Premiums Written and Losses Paid, 409–410
Steamer *President Hoover,* 410
War Risks, 411–412
Maritime Commission, 148, 524–525
Mathematics, 645–650
American Mathematical Society, 645–647
—Addresses, 646
—Algebraic Geometry Conference, 645–646
—Chicago Symposium, 646
—Indianapolis Meeting, 646–647
—Meetings, 645
—New York Meeting, Topics of, 645
—State College Lectures, 646
Descartes Congress at Paris, 648
Geneva Colloquium, 648
Mathematical Association of America, 647
—Annual Meeting, 647
—Sectional Meetings, 647
—Summer Meeting, 647
National and International Developments, 647–648
—Notre Dame Symposium, 647–648
—Sectional Meetings at Denver, 648
National Council of Teachers of Mathematics, 647
Research, 648–650
—Theory of Probability, 649
—Topology, 649–650
—Transcendental Numbers, 649
Mathias, Mildred E., 754
McDonald, Stewart, 567
McMahon, Charles A., 621
Mechanical Engineering, 668–673
Gas Power, 672
Machine Tools, 670–671
Materials, 669–670
Miscellaneous, 673
Research, 668–669
Standards, 669
Steam Power, 671–672
Transportation, 672–673
Medical Sciences, 765–786
Medicine, Pathology and Physiology, 765–771
Insulin Shock Therapy in Schizophrenia, 766–767
Muscles, Studies in the Diseases of, 769–770
Poliomyelitis, 765–766
Sulfanilamide, 767–769
Vitamin B Deficiencies, 770–771
Meleney, Frank L., 771
Merchant Marine, 28, 522–531
Bland Seamen Discharge Book Act, 28
Building Prospects for Subsidized Lines, 530
Economic Survey of Maritime Commission, 522–523
Handicap of Old and Slow Ships, 523–524
Investment Outlook for American Shipping, 529–530
Maritime Commission Activities, 524–525
New Cunarders, 528
New Liner of U. S. Line, 525–527
Other Ship Construction, 527
Phases of Profit Angle, 531
Tonnage Volume of World Merchant Shipping, 528–529
Merrill, John E., 650
Messer, William Stuart, 859
Meteorology and Climatology, 716–720
Isentropic Charts, Value of, 717–718
Isentropic Principle of Atmospheric Motion, 716–717
Meteorological Instruction, 719
Publications, 720
Soil Conservation Service Research, 719–720
Weather Bureau Developments, 718–719
Mexico, U. S. Interests in Threatened, 74
Michelbacher, G. F., 412
Miller, John A., 519
Mineral Industries, 462–485

Mineralogy and Petrography, 707–710
Accessory Minerals in Igneous Rocks, 709–710
Antarctic Petrography, 709
Constitution of the Silicates, 707–708
Diamonds in the United States, 708
Magmatic Differentiation, 709
Mica in Sedimentary Rocks, 708
Mineral Microchemistry, 707
New Minerals, 708–709
Pegmatites and Ore Deposits, 710
Petrofabric Analysis, 709
Publications, New Mineralogical, 709
Publications, Petrography, 710
Silicosis, Mineralogy of, 707
Ministers, Accredited to U. S., List of, 91
U. S., List of, 91–92
Mitchell, Harry B., 131
Moore, Charles N., 645
Moore, Raymond C., 260
Motion Pictures, 904–908
Bank Night and Other Matters, 905
Biographical Films, 906–907
Censorship, 905
Deaths, 908
Film Output, 906
General Report, 904
Labor Factor, 904–905
Newsreels, 905–906
Notable Pictures and Awards, 908
Screen Personalities, 908
Single Versus Double Feature Shows, 905
Social and Documentary Films, 907
"Ten" Best Pictures, The, 907
Motor Bus Industry, 517–519
Increased Revenue and Patronage, 517
Labor and Wages, 518
Mergers and Consolidations, 518–519
Record New Bus Purchases, 518
Scope of Industry, 517
Mott, Rodney L., 163
Municipal Finance, 232–238
Bond Issues, 236
Continued Improvement in City Finances, 232
Debt Adjustment Legislation, 238
Debt Defaults, 237–238
Expenditures, Municipal, 232–234
—Importance of Different Functions, 234
—Interest and Outlay Payments, 234
—Per Capita, 233
—Percentage Used for Different Functions, 234
—Statistics on, 232–233
Federal Emergency Administration of Public Works, 236–237
Indebtedness, Municipal, 236
—Funded and Floating, 236
Sources of Revenue, 234–235
—Per Capita Receipts from Different Sources, 235
—Percentage of Receipts from Different Sources, 235
—Poll and Business Taxes, 234–235
—Property Taxes, 234
Municipal Government, Functions and Types, 190–197
Administration, 190–191
Billboards, 196–197
Charter Revision and Reform, 191
Fire Hazards and Protection, 194–195
Fire Prevention, 193–194
Fire Safety Problems, 195
National Municipal League Meeting, 197
Municipal Debt Relief, 192–193
Organization of Municipal Employees, 192
Police Administration, 193
Schools for Firemen, 195–196
Trailer Taxes and Fees, 196
Training for Public Service, 191–192
Municipal Government, Politics, 186–190
Boston, 189
Buffalo, 188–189
Cincinnati, 190
Cleveland, 189
Detroit, 189
New York City, 187–188
Pittsburgh, 189
Toledo, 189–190
Music and the Opera, 891–898
Deaths, 897–898
Federal Music Project, 897
Festivals, 895–896
Hofmann, Josef 895
Menuhin, Yehudi, 894–895
Metropolitan Opera House, 891–892
Opera, 891–893
—Chicago, 893
—New Orleans, 893
—New York, 891–893
—St. Louis, 893
—San Francisco, 893
Orchestras, 893–894
Radio, 896–897
Summer Music, 895

NADLER, Marcus, 377
National Affairs, *see* Chronology
National Finance, 222–225
Government and the Tax Problem, 223
Government Bond Price Factor, 222–223
Public Debt, Increase in, 223–225
Public Debt, Treasury Attitude Toward, 222
Sources of Tax Receipts, 225
National Government, 111–154
See also Chronology
Naval Aeronautics, 344–350
Advances in Aeronautical Science, 349–350
Aircraft Operations, 345–346
Aviation Shore Establishment, 346–347
Bureau Activities and Objectives, 344–345
Engines, 349
Financial, 347
Maintenance, 348–349
Reserve Aviation, 346
Naval Construction and Equipment, 330–344
Battleship Construction, U. S., 332–333
—Features of, 333–334
—Projected Program, 334
Battleship Plans, Special U. S. Board on, 338–339
Bureau of Construction and Repair Activities, U. S., 337–338
Combatant and Commission Constituent, U. S. Fleet, 336–337
Combatant Craft in U. S., Naval Estimates, 334–335
Construction Materials, 336
International Scene, Summary of, 330
—International Recognition of Russia, 331–332
—London Naval Treaty, 330–331
—United States Position, 332
Naval Auxiliary Construction, U. S., 335–336
Naval Construction Activities in Foreign Countries, 340–344
—Argentina, 343–344
—Brazil, 343–344
—British Empire, 340–341
—Chile, 343–344
—Colombia, 344
—France, 341
—Germany, 342
—Italy, 341–342
—Japan, 343
—Soviet Russia, 342–343
U. S. Fleet, Material Condition of, 339–340
Naval Education, 350–356
Enlisted Men, 354
—Recruits, 354
—Service Schools, 354
Graduate Instruction, 353
Naval Reserve, 354–355
Naval Reserve Officers' Training Corps, 355
Naval War College, 353–354
U. S. Naval Academy, 350–352
—Appointment of Midshipmen, 350–351
—Curriculum, 351–352
—Faculty and General Aims, 352
—Qualifications, 351
—Status and Pay of Midshipmen, 351
—Summer Practice Cruise, 352
Naval Operations, U. S., 324–330
Asiatic Fleet, 327
Aviation, 326–327
—Aircraft, 326
—Flights, 326–327
Employment of Forces, 324

—Basic Policy, 324
—Objectives, 324
—Organization, 324
Marine Corps, Operations of, 329–330
Naval Communications, 328–329
Naval Intelligence, 328
Operating Force and Personnel Plans, 324–325
—Personnel, 324
—Purpose, 324
—Ships in Commission, 324
—Ships Placed out of Commission, 325
Special Service Squadron, 327
Squadron Forty (Temporary), 327
Technical Development, 329
Transportation Service, 327–328
United States Fleet, 325–326
—Engineering Performances, 326
—Gunnery, 326
—Operations, 325
—Tactics, 325–326
Near East, *see* Orient and Near East
Necrology, 972–976
Negro Education, 954–964
Neutrality Act of 1937, 29–30, 69–70
New York City Affairs, 183–188
Dept. of Correction, 186
Finances, 184
Health, 185
Housing, 185
Legal, 185
New Administrative Code, 183–184
Parks, 186
Personnel Administration, 184–185
Politics, 187–188
Proportional Representation Election, 183
Public Relief, 185
Public Safety, 186
Re-election of Mayor La Guardia, 183
Transportation, 186
Nicaragua, Boundary Dispute with Honduras, 76
Non-Ferrous Metals, 475–480
Copper, 476–477
General, 475–476
Lead, 477–478
Tin, 478
Zinc, 479–480
Nugent, Frank S., 904

OCEANOGRAPHY, 724–725
American Geophysical Union, 725
Arctic Ocean and Bering Sea, 725
Atlantic Ocean, 724
—Ice Observation and Patrol Service, 724
—Tide Observation and Hydrographic Surveys, 724
Gulf of Mexico, 725
Ocean Bottom Surveys, 725
Pacific Ocean, 724–725
—Hydrographic Surveys, 724
—Tide Observations, 725
Organic Evolution and Genetics, 744–751
Acquired Characters, 749–750
Experimental Populations, 747–748
Mathematical Approach to Organic Evolution and Genetics, 750–751
Position Effects, 746–747
"Race," 745–746
Selection, 748–749
Study Methods, Change in, 744–745
Orient and Near East, Relations in, 78–89
Arabia, 86
Brussels Conference, 84–85
China, 80–81
Egypt, 86–87
First Half of 1937 in the Far East, 78–79
Japan and China; the Undeclared War, 79
Japanese Internal Affairs, 79–80
Near East, Summary of Year in, 85–86
Palestine and Great Britain, 87–88
Panay Incident, 85
Turkey, 88–89
Undeclared War, 81–83
—Course of, 81–83
—United States Policy, 83–84
Osgood, Thomas H., 730
Overacker, Louise, 171

PAGE, John C., 267
Painting, 875–884
American Loans Abroad, 884
Bache Gift, 881–882
Exhibitions, Constitution Anniversary, 882
—Other, 882–883
Federal Art Project, 877–878
Government Art Program, 875
Guggenheim Foundation, New, 882
Mellon Gift, The, 880–881
Mural Painters Versus Labor Unions, 879–880
Murals, Miscellaneous, 878–879
—Post Office, 876–877
—Rockwell Kent Episode, 875–876
Prizes and Awards, 883–884
Rental Issue, 883
Smithsonian Gallery, 881
Palestine, Archaeology, 873–874
Friction of Arabs against Jews, 109
Partitions of, Proposed by British Royal Commission, 87–88
Palmer, Archie MacInnes, 920
Panay Incident, 85
Pelley, John J., 505
Peterson, Mildred Othmer, 964
Persia (Iran), Archaeology, 874
Petroleum, 480–485
Crude Oil, 480–481
—Exploration and Drilling, 480–481
—Foreign Trade, 481
—Output, 480
—Prices, 481
—Storage, 481
Employment and Payrolls, 485
Marketing, 482–484
—Demand, 482–483
—Gasoline Costs, 483, 484
—Gasoline Taxes, 483–484
—Prices, 483
Refining, 481–482
—Foreign Trade, 482
—Motor Fuel, 481–482
—Operation, 482
—Products, 482
—Volume, 481
Research, 485
Reserves, 484–485
Taxes and Earnings, 484
Philippine Islands, 207–211
Citizenship, 208
Education, 210–211
Finances, 209–210
General Conditions, 211
Government Organization, 208–209
Joint Trade Conference, 209
Legislation, 209
Political and Governmental Status, 207–208
Trade, 210
United States High Commissioner, 209
Philosophical and Social Sciences, 787–814
Philosophy, 796–804
Aesthetics, 803
Bibliography, 804
Ethics and Value Theory, 802
History of Philosophy, 798–799
Logic 801–802
Logical Positivism, 800–801
Meetings, 796–797
Metaphysics and Epistemology, 799–800
Miscellaneous, 804
Religion, 803–804
Science, Philosophy of, 801
Social Philosophy, 802–803
Texts, 797–798
Physics, 730–734
Cosmic Rays, 732–733
Nuclear Chemistry, 730–731
Solids, 734
Thin Films, 733–734
X-Rays, 732
Platt, Elizabeth T., 830
Poetry, 820–823
Anthologies, 822
Bogan, Louise, 821
Coffin, Robert P. Tristram, 821
Collections and Selections, 821
Drama, Poetic, 821
English Poetry, 822–823
Hillyer, Robert, 821
Jeffers, Robinson, 820–821
Millay, Edna St. V., 820
Narrative Poetry, 822
New and Minor Poetry, 822
Pound, Ezra, 820
Stevens, Wallace, 821
Taggard, Genevieve, 821

Translations, 823
Van Doren, Mark, 821
Population Statistics, 545–550
Births and Deaths, 546
Citizenship of Foreign Born, 549
Dwellings and Families, 549
Gainful Workers by Industry, 547–548
Growth of Population, 545–546
Illiteracy, 548–549
Inability to Speak English, 549
Old Age Pensioners, 548
Puerto Rico, Census of, in 1935, 549–550
—Literacy and Ability to Speak English, 550
—Population by Age Compared with U. S., 550
Statistical Summaries, 550
Urban-Rural Population, 547
Powell, Thomas Reed, 35
Prentice, Donald B., 668
President, The, and His Policies, 1–11
President Roosevelt, *see* Roosevelt, Franklin D.
Professional Education, 928–942
Protestant Denominational Activities, 604–611
Church Memberships, 605–607
—Statistics, 606
Lutheran Church, 611
Methodist Episcopal Church, 610–611
Northern Baptists, 609
Preaching Mission, 605
Presbyterian Church, U. S., 608–609
Presbyterian Church, U. S. A., 607–608
Progress toward Union, 605
Protestant Episcopal Church, 610
Reformed Church in America, 609–610
Revival of Interest in the Church, 604–605
Southern Baptists, 609
Stewardship Conferences, 605
Psychology, 787–796
Abnormal, 793–794
—American Psychiatric Society, 793
—Books, 793
—Hypnosis, 793–794
—New Concept, 794
Activities, 787
—Association Meetings, 787
—Principal Trends, 787
Adolescence, Conflicts, 794
Animals, 793
—Apes, 793
—Genetic, 793
—Learning, 793
—Maternal Behavior, 793
Applied, 796
—Play, 796
—Radio, 796
Child, The, 794
—Neonate, The, 794
—Problems, 794
Educational Psychology, 796
—Cases, 796
—Texts, 796
Feeling and Emotion, 791
—Aesthetic Feelings, 791
—Emotion, 791
Intelligence, 790
—Individual Differences, 790
—Tests, 790
Learning and Thinking, 790–791
—Learning Concepts, 790
—Mental Work, 791
—Reasoning Experiments, 791
Literature, General, 787–788
—Asserted Telepathy, 787–788
—Periodicals, 788
—Psychology Films, 788
—Textbooks, 788
—Theoretical, 788
Motor Phenomena, 792–793
—Muscular Traits, 792–793
—Mutism, 792
—Stuttering, 792
Personality, 788–789
—Books, 788–789
—Diagnosis, 788
Physiological, 791–792
—Brain Structure, 792
—Brain Waves, 791–792
—Nerve Chemistry, 791
—Skin Reflexes, 792
Sensation and Perception, 789–790
—Audition, 789
—General Theory, 789
—Taste and Smell, 790
—Touch, 789–790
—Vision, 789
Social, 794–795
—Changing Attitudes, 794–795
—General, 795
—Marriage, 795
—Primitive Man, 795
Vocational, 795
—Employment, 795
—Youth, 795
Public Finance and Taxation, 222–258
Public Health and Hygiene, 776–779
Health and Housing, 777–778
Health Education, 778
Mental Hygiene, 778–779
Plague, 777
Pneumonia, 776
Preventive Medicine on the Highway, 777
Public Health and Social Security, 776
Syphilis Control, 777
Virus Diseases, 776–777
Public Lands, 269–273
Cadastral Engineering Service, 270, 272
Conservation under Taylor Grazing Act, 269
Emergency Conservation Work, 270
Lands Patented with Mineral Reservations, 270, 272
Patents, 272
Receipts and Expenditures, 272, 273
—Statistics on, 273
Unappropriated Public Lands, 270, 271
—Statistics on, 271
U. S. District Land Offices, 269
Public Resources and Utilities, 259–287
Public Utilities, 274–277
Holding Company Act Litigation, 276
Pacific Gas and Electric Case, 274–275
Prudent Investment Rate Base, 275–276
PWA Grants and Loans, 274
Regulatory Legislation, 274
TVA Issues, 276–277
Public Works Administration, 3–4, 8
Judicial Decisions on, 130
Puerto Rico, 204–207
Agriculture, 206
Commerce, 205
Description and Area, 204
Economic Conditions, 205
Education, 207
Finance, 205–206
Government, 204
Health, 207
Labor Conditions, 207
Legislation, 204–205
Public Works and Communications, 206–207
Rehabilitation, 206
Tourist Promotion, 205

RACE Conditions in the United States, 540–544
Census and Registry, 542–545
Decennial Census of 1940, Preparation for, 541–542
Factors in Trends and Changes, 540–541
Racial Descent, 542, 544
Radio, 684–691
Amateur Radio, 687
Automatic SOS Alarm, 687
Aviation Radio, 686–687
—Receivers, 686–687
—Transmitters, 686
Broadcasting Stations, 690
Commercial Facsimile, 687–688
Direction Finders, 687
F. C. C. Regulations, New, 689
Inter-American Radio Conference, 689–690
Police Radio, 686
—Receivers, 686
—Transmitters, 686
Receivers, 684–686
—Antennas for Automobile Receivers, 686
—Automobile Receivers, 685
—Cabinet, Dial and Other Special Features, 684–685
—Electric and Automatic Tuning, 684
—Noise-Reducing Antennas —Home Receivers, 685–686
—Phonograph Combinations and Records, 685
—Private Inter-Communicating Systems, 686
—Receiver Tubes, 685
—Sales Data, 685
Short Radio Waves, 690

Television, 690–691
—Electron Multiplier, 690
—Experimental Tests, 690
—Image Tubes and Iconoscopes, 690–691
—Projection Kinescope, 691
—Television Transmitter Developments, 690
Test Equipment, 691
Transmitters, 688–689
—Broadcast Speech Input Equipment, 688
—Broadcast Transmitters, 688
—Commercial Transmitters, 688
—Crystal Development, 688–689
—Transmitter Tubes, 688
—Transmitting Antennas, 688
Railroads, 505–511
Freight Rates and Passenger Fares, 508
General Conditions, 505–506
Long-and-Short-Haul Bill, 509–510
Motor Truck Competition, 509
Net Earnings, 511
Operating Costs, 507–508
—Material Costs, 507
—Recapitulation, 507–508
—Taxes, 507
—Wages, 507
Operating Expenses, 511
Operating Revenues, 510–511
Purchases and Capital Expenditures, 509
Railroad Dilemma, 506–507
Railroad Retirement Legislation, 509
Railroads and the Depression, 506
Railway Employees, 511
Receiverships and Trusteeships, 508–509
Signal Inspection Act, 509
Special Financing, 510
Traffic, Freight and Passenger, 510
Train Limit Bill, 510
Randall, Charles E., 457
Reclamation and Irrigation, 267–268
Acreage and Financial Statistics, 268
Construction Results, 267
Engineering Information, 268
Farms and Public Lands, 267–268
Irrigation Area and Projects, 267
Reclamation Production and General Business, 268
Relief, Appropriation Bills, 30
Chronology, 151
New York City, 185
Roosevelt's Policies, 7–8
See also Social Work
Religion and Religious Organization, 604–644
Richardson, J. O., 324
Richardson, L. S., 442
Rittenhouse, Irma, 593
Roman Catholic Church, The, *see* Catholic Church
Romance Languages and Literatures, 850–854
Bibliographies, 850
Foreign Influence, 854
French, 851–852
Italian. 852–853
Linguistics, 850–851
Spanish, 853–854
Roosevelt, Franklin D.,
Administrative Reorganization, 6–7
Agricultural Policy, 9–10
Business Policy, 8–9
Chicago Speech, 2–3, 71, 83, 93–95
Chronology of International Activities, 104–105
Chronology of National Affairs, 60–62, 135–137
Congress and the President, 11–12
Conservation Policy, 10
Far Eastern Policy, 2, 68, 70–72, 83–85
"Fireside Chat" on Judicial Reform, 5–6
Fiscal Policy, 3–4
"Good Neighbor" Policy, 2, 74
Housing Program, 10–11
Judicial Reorganization, 4–6
Labor Policy, 8
Neutrality and Foreign Trade, 1–2
Power Program, 10, 29
Relief, Recovery and Reform, 7–8
Reorganization of Executive Branch Proposal, 23–25
Ruddick, Chester Townsend, 796

SAMOA, American, 216–217
Agriculture, 217
Banking, 217
Education, 217
Health and Sanitation, 217
History, 216
Government, 216
Population, 216
Trade and Commerce, 217
Sandelius, Walter, 167
Sayre, Wallace S., 183
Schley, Julian L., 313
Schneiderman, Harry, 636
Schnitman, L. Seth, 486
Schuyler, William M., 111, 122
Sculpture, 884–887
Ceramic Sculpture, 885–886
Exhibitions and Awards, 885
Fellowships, 886
Government and Art, 884
One-Man Exhibitions, 886
Placements and Commissions, 886–887
Soap Sculpture, 886
Trends and Influences, 884–885
Secondary Education, 914–920
Security and Money Markets, 365–370
Bond Values, 368
General Conditions in Stock Market, 365–366
Interest Rates, 370
Market Value of Shares, 367–368
—Composite Bonds, 368
—Security Market Prices, 368
Money Market, 369–370
Shares Traded on N. Y. Stock Exchange, 369
Stock Prices, 366–367
—Coppers, 367
—Industrials, 366
—Rails, 367
—Utilities, 367
Volume of Bond Transactions, 369
Volume of Stock Transactions, 368–369
Semitic Languages and Literatures, 862–864
Arabia, Islam, 864
Asia Minor, 863
Egypt, 864
General, 862
Iraq, 862–863
Publications, 864
Syria-Palestine, 863–864
Senate, U. S., Action on Supreme Court Reorganization Plans, 14–16
Contest for Majority Leader, 16
Members of, 118–119
Sheldon, Preston King, 611
Shipping, *see* Merchant Marine
Silver, Government Purchases of, 4
See Gold and Silver
Smith, Hal H., 17
Social Problems and Conditions, 552–575
Social Work, Public and Private, 552–562
Child Welfare Services, Federal and State, 554–555
Community Chests and Councils, 561
County Boards of Public Welfare, 558
Crippled Children, Services for, 555–556
Delinquency and Juvenile Courts, 560
Marriage Laws, 559–560
Mental Hygiene, 560
Merit System, 558–559
Public and Private Agency Relationships, 561–562
Recreation, 560–561
Social Security Act, Activities Under, 552–554
—Aid to Blind, 553–554
—Aid to Dependent Children, 554
—Old Age Assistance, 553
—Social Insurance Measures, 552–553
Social Welfare Activities in
—Arkansas, 558
—Florida, 558
—Iowa, 556
—Kansas, 557
—Michigan, 558
—Missouri, 557
—Pennsylvania, 557
—South Carolina, 557
Welfare Departments, State and Local, 556
Sound Films, Technical Advances in, 691–693
Public Address Equipment, 692–693
Reproducing Systems and Accessories, 691–692
Sound Recording, 692

Spaeth, John W., Jr., 854
Spain, Chronology of Affairs, 109
Civil War in, 68–69
Shipment of Munitions to, 2, 69
Spanish Munitions Act, 29, 69–70
State Administration and Legislation, 155–163
Crime Control, 159
Education, 158
Health, 158–159
Housing, 157
Labor Legislation, 156–157
Legislative Aids, 163
Motor Vehicle Legislation, 160
Planning and Zoning, 157–158
Police Systems, 159–160
Public Personnel, 162–163
Public Welfare, 155–156
Reorganization, 160–162
Social Security, 156
Tax Legislation, 160
Trends in, 155
State Constitutions, Referenda and Initiatives, 167–171
Bond Issues, 170
Court Organization and Procedure, 169–170
Governmental Organization and Procedure, 168–169
Miscellaneous Measures, 170–171
Social Security, 169
Statistical Summary, 167–168
Summary by States, 168
Taxation, 170
State Finance, 225–232
Bank Taxation, 230
Chain Stores, Taxation of, 228
Corporation and Business Taxes, 229
Death Duties, 229–230
Gasoline Taxes, 228
Indebtedness of States, 230
—Statistics of, 231
Inheritance Taxes, 230
Miscellaneous Tax Developments, 230–232
Oleomargarine Taxes, 226–227
Personal Income Taxes, 227
Sales Taxes, 225–226
Tobacco Taxes, 228–229
State Geological Surveys, 260–267
Basic Geology, 261–263
Coal, Coke and Peat, 264
Geologic and Topographic Maps, 266–267
Ground-Water Resources, 265–266
Metallic Minerals, 264–265
Miscellaneous Projects, 267
Nonmetallic Minerals, 265
Oil and Gas, 263–264
State Government, 155–182
States, National and Interstate Relations of, 163–167
Annual Governors' Conference, 164
Commissions, 164
Co-operation, Trends Toward, 163–164
Crime, Interstate Co-operation on, 166
Delaware River Conference, 164
Flood Control Commission, 165
Interstate Administrative Agencies, 165–166
Interstate Assembly, 164
Interstate Compacts, 167
Reciprocity, 166–167
Social Security Program, 166
Stephenson, Gilbert T., 375
Stevens, Raymond B., 495
Stocks, Carl W., 517
Stone, Robert G., 716
Stone, William T., 68
Strikes, Number of, 584
Sit-Down, 129
Strong, Lee A., 447
Strong, Wendell M., 401
Structural Engineering, 658–667
Alcova and Seminoe Dams, 660–661
Baton Rouge Bridge, 663
Bonneville Dam, 660
Boulder Dam, 659
Chicago Outer-Drive Bridge, 663
Chimneys, 667
Colorado River Aqueduct, 666
Continental Divide Tunnel Project, 665
Delaware River Tunnel Aqueduct, 665
East River Tunnel, 665
Florida Ship Canal, 666
Fort Peck Dam, 659–660
Friant Dam, 662
Golden Gate Bridge, 663
Grand Coulee Dam, 658–659
Key West Overseas Highway, 667
Kingsley (Keystone) Dam, 662
Lincoln (Midtown) Tunnel, 664–665
Marine Park Bridge, 664
Neches River Bridge, 664
New York City's Subways, 665–666
New York City's West Side Park Improvement, 666–666–667
Ohio Valley Flood Control Dams, 662–663
Pan-American Highway Bridges, 664
Parker Dam, 661
Publications, 667
Radio Towers, 667
San Francisco-Oakland Bridge, 663
San Gabriel Dam No. 1, 661
San Jacinto Tower, 667
Shasta (Kennett) Dam, 661–662
Tennessee Valley Dams, 662
Upper Mississippi River Locks and Dams, 662
Whitestone Bridge, 663–664
Stuart, Graham, 73
Supreme Court, Alignment of, 35–36
Decisions of,
—Amended Railway Labor Act, 36–37
—Coercion upon the States, 50–53
—Commerce Question, 37
—Due Process and Freedom of the Press, 40–42
—Freedom of Speech and of Assembly, 47–49
—Minimum Wage Laws, 44–47
—National Taxing and Spending Power, 56–58
—Picketing and Union Rules, 43–44
—Social Security Cases, 49–50
—State Taxing Power, 54–56, 59
—Surrender of State Sovereignty, 53–54
—Wagner Act Cases, 37
Reorganization Proposals, 4–6, 14–16
Supreme Court, The, and Constitutional Law, 35–59
Surgery, 771–775
Anesthesia, 771–772
—Avertin, 771
—Barbituric Acid Derivatives, 772
—Cyclopropane, 771–772
—Spinal Anesthesia, 771
Cardiovascular Disease, 773–774
—Heart, 773
—Hypertension, 774
—Peripheral Vascular Disease, 774
Ductless Glands, Surgery of, 772–773
—Pancreas, 773
—Parathyroid, 772–773
—Suprarenals, 773
—Thyroid, 772
Infections, Surgical, 774–775
—Sulphanilamide, 775
—Zinc Peroxide, 774–775
Progress in, 771
Suter, C. M., 735
Syria, Archaeology, 874

TARIFF Commission, U. S., 495–501
Dressed or Dyed Furs, 499
Equal Tariff Treatment in Foreign Countries, 496–497
Excise Taxes, 497
Flat Glass and Related Glass Products, 498–499
Membership and Organization, 495
Nets and Netting and Other Fishing Gear, 497
Salmon and Other Fish, 497–498
Sodium Sulphate, 499
Trade Agreements Program, 500–501
Unfair Practices in Import Trade, 499–500
United States-Philippine Trade, 496
Wood Pulp and Pulpwood, 495–496
Wool Prices, 498
Works Progress Administration Projects, 501

Tariff Laws, Administration of, 501–505
Claims and Penalties, 503
Customs Collections, 501
Customs School of Instruction, 505
Customs Seizures, 502–503
Customs Waivers in Emergency Relief, 503–504
Foreign Trade Zones, 504
Quota Control, 504
Reorganization of Appraising Forces, 504–505
Smuggling, 503
Trade Agreements Act, 504
Volume of Business, 501–502
—Airplane Traffic, 502
—Drawback Transactions, 502
—Entries of Merchandise, 501
—Marine Transactions, 501
—Statistics on, 502
Taxes, Automobile, 255–257
—Gasoline, 257
—Interstate Regulation, 256
—Registration and Revenue, 255
—Registration Fees, 256–257
—Tax Bases, 256
Corporation and Bank, 250–252
—Banks, 252
—Franchise Taxes, 251
—Insurance Premiums Tax, 251–252
—Intangibles Income Tax, 251
—Power and Utilities, 251
—State Corporate Income Tax, 250–251
Estate and Inheritance, 252–255
—District of Columbia Inheritance Tax, 255
—Federal Receipts, 252–253
—Federal Regulations, New, 252
—Gift Taxes, New, 254–255
—Questions of Domicile, 253–254
—State Legislation, 254
Income, Federal, 238–239
—Statistics on, 239
Income, State, 239–243
—Changes in, 239
—Corporation Tax Provisions, 241
—Personal Tax Provisions, 240
—Productivity and Use of, 242
—Revenue from, 243
—Status of, 242
Land and Property, 244–250
—Assessment, 244
Administration, 244
Requirement, 244
—Commissions of Inquiry, 244
—Exemptions, 247–248
Charitable and Religious, 247
Commercial, 248
Educational, 248
Homestead, 247
Miscellaneous and Minor, 248
Public Property and Bonds, 247
Veterans, 247–248
—Property Classification, 245
—Tax Collection, 248–250
Abatement, 249
Collectors, 250
Compromise, 249
Installment Payment, 248
Liens, 249
Protest, 249
Redemption, 249–250
Refunds, 248
Salary Deductions, 249
Sale of Lands Taken for Taxes, 249
Tax Sale Procedure, 249
Validating Action, 249
Waiver of Interest and Penalties, 248–249
—Tax Limitation, 245–247
Educational, 245–246
Health and Sanitation, 246
Levies, 245
Mandatory, 245
Minor and Miscellaneous, 246
Protection, 246
Roads and Parks, 246
Situs, 246–247
Social Security, 246
State and General, 245
Taylor, Hugh S., 727
Terrestrial Magnetism and Electricity, 710–716
American Magnetic Character-Figure, 712–713
American Organizations Doing Magnetic Work, 715
Archives of Magnetic Records, 713
Chromospheric, Magnetic, and Ionospheric Disturbances, 710–711
Cosmic Radiation, 714–715
Earth-Currents, 713–714
Ionosphere, 713
Magnetic Surveys, 712
Measurement of Rock-Magnetization, 711
Observatories, 711–712
Publications, 715–716
Secular Variation, 711
Territories and Spheres of American Influence, 198–221
Theatre, 898–903
American Plays, 899–900
Federal Theatre Project, 903
General Trend, 898
Imported Plays, 901–902
Prizes, 898–899
Revivals, 900–901
—Shakespearean, 900–901
Spectacle and Music, 902–903
Summer Theatres, 903
Thomas, Robert S., 288
Thull, Beulah Bailey, 255
Tillema, John A., 31
Tin, 478
Toll, Henry W., 155
Traffic, Street and Highway, 282–287
Accident Prevention, 283
Drunken Driving, 282
Lighting and Traffic Signals, 284
Motor Vehicle Inspection, 283
Motor Vehicle Registration, 282
Parking Problem 285–286
Reckless Driving, Checks on, 283
Regulation, 285
Research and Studies, 285
Surveys, 284–285
Tow-Car Situation, 286–287
Trailers, 286
Vehicular Tunnels, 287
Volume and Casualties, 282
Transit, Community, 519–522
Equipment Purchases, 520–521
Fares and Costs, 520
Operating Revenues, 519
Operation, Statistics on, 520
Outlook, 522
Passenger Traffic, 519–520
Popularity of Small Bus, 521
Route and Equipment, 521–522
Trolley Bus Orders, 521
Transportation, *see* Aviation, Motor Bus Industry, Railroads, Merchant Marine
Travel, 830–833
Africa, 831
Asia, 832
Europe, 831
Mexico and Central America, 831
Miscellaneous, 833
Pacific, The, 832
Polar, 832–833
United States, 830–831
West Indies, 831
Trubek, Max, 765
Truesdell, Leon E., 545
Trujillo, General, Dominican President, 76
Trust Business, 375–377
Advanced Trust Education, 375
Common Trust Funds for Small Trusts, 376–377
Costs and Charges, Emphasis on, 376
Organized, Directed Trust Research, 375–376
Statistics on, Need for Authoritative, 377
Turkey, Archaeology, 874
Bayar Replaces Inönu, 89
Historical Congress, 88–89
Revolt of the Kurds, 88

UNEMPLOYMENT, Census approved, 26
Compensation, 584–585
Registration and Placement, 576–577
Social Security, 584
Volume of, 598
United States and Europe, 68–73
Brussels Conference, 71–72
Co-operation with League of Nations, 72
Course of American Opinion, 68
Neutrality Act of May 1, 1937, 69–70
Neutrality and the Far Eastern Conflict, 70–71

Reciprocal Trade Agreement, 72
Roosevelt's Chicago Speech, 71
Spanish Civil War, 68–69

VAN DEVANTER, Justice Willis, Retirement of, 6, 14–15
Veterans Affairs, Administration of, 306–312
Adjusted Compensation, 311
Dental Relief, 311
Disbursements, Summary of Total, 309
Domiciliary Care, 310–311
—Admissions and Discharges, 311
—Remaining, 310
Finance, 312
Hospitalization, 310
—Admissions, 310
—Deaths, 310
—Discharges, 310
—Remaining under Treatment, 310
Insurance, 311–312
—Government Life (Converted), 311–312
—Term and Automatic, 312
Pensions, 306–307
—Civil War, 306–307
—Indian Wars, 306
—Mexican War, 306
—Peace Time Pensions, 307
—Spanish American War, 307
—War of 1812, 306
Physical Examinations, Out-Patient Treatments, 311
Walter Reed Honor Roll, 309
World War Pensions and Compensations, 307–309
—Deceased Veterans, Non-Service Connection, 309
Service Connection, 308–309
—Emergency Officers, 308
—Living Veterans, Non-Service Connection, 308
Service Connection, 307–308
Virgin Islands, 211–214
Co-operatives, 213–214
Economic Trend, 214
Emergency Conservation Work, 213
Government, 211
Homesteading, 212
Road Program, 213
Sanitation and Water Supply, 213
Tourist and Winter Residents, 212
Urban Housing, 212–213
Virgin Islands Company, 211–212
Vital Statistics, 780–785
Annual Publications, 780
Field Activities, 781
Instruction Manual, 780
Organization, 780
Special Studies, 780–781
Summary Tables, 781–785
—Death Rate by Cause, 785
—Growth of Registration Areas, 782–783
—Natality and Mortality, by States in 1936, 784
Vocational Education, 942–946

WATER SUPPLY, 277–281
Construction, 278–279
Consumption, 281
Economics, 278
Government Control and Regulation, 281
Pipes, 280
Pollution Control, 277–278
Pumping Machinery, 280
Water Purification, 280–281
Waterways and Harbors, 313–323
Coastwise Commerce, 320, 322–323
—Canal and Connecting Waterway, 320
—Foreign, Domestic Commerce of Ports, 323
—Panama Canal, Commerce Through, 320
Flood Control, 318–319
—Los Angeles, 319
—Mississippi River Project, 318–319
—Muskingum Valley, 319
—National Flood Control Act, 318
—Vermont, 319
Inland Waterways, 313–314
—Channel Depths, 313
—Columbia River System, 314
—Great Lakes, 313–314
—Intercoastal Waterways 314
—Location and Description, 313
—Mississippi River System, 314
—Waterway Projects, 313
Inland Waterways Commerce, 321
—Statistics on, 320–321
Port Facilities, 314–318
—Great Lakes Ports, 318
—Gulf Coast Ports, 315, 316–317
—Improvements in, 315
—North Atlantic Ports, 314, 315–316
—Pacific Coast Ports, 315, 317
—South Atlantic Ports, 316
Weber, Herman C., 604
West, W. Reed, 219
Weston, Robert Spurr, 277
Weygandt, Cornelius N., 673
Whitney, Paul C., 724
Winship, Blanton, 204
Wolf, Austin M., 693
Woodruff, Clinton Rogers, 174, 190
World Court, American Judge on, 102
U. S. Non-adhesion to, 93–94, 102

YOUNG, Malcolm Oakman, 826
Yugoslavia, Serb-Croat Revision of Constitution, 109

ZINC, 479–480
See Non-Ferrous Metals

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